

# THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE

VOL. LXXVIII. NEW YORK, SATURDAY, JUNE 8, 1901.

No. 23.

## ADDRESSES.

### THE PRESIDENT'S ADDRESS.<sup>1</sup>

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IN approaching the discharge of my duties as presiding officer of the fifty-second session of the American Medical Association, I beg to express my appreciation of the generous suffrages by which I have been called to a position of such conspicuous honor. This appreciation becomes all the more pronounced when I reflect upon the magnitude and achievements of this great national body and upon the luster of the distinguished men who have presided over its deliberations. This thought brings me to the first duty of the occasion, and that is, officially to bring to your attention the fact that since our last reunion three of my most illustrious predecessors have been called from their worldly activities to the realm of rewards—Alfred Stillé, Lewis A. Sayre and Hunter McGuire, each a former President of the Association, died within a single week. Their lives were known of men, their records are ornaments of our annals, and their achievements are their eulogies. They labored zealously and with beneficent results, not alone in the scientific field, but in behalf of an organized national profession; and to guard zealously the splendid legacy which they, among others, have left us, must be one object of our labors upon this auspicious occasion. The hope is indulged that steps may be taken to procure suitable portraits of these and of other deceased Presidents of the Association, to be placed in some safe gallery until such time as the Association may be able to transfer them to its own Temple of Fame. I recommend that suitable formal action be taken on this occasion relative to the life, distinguished services, and the death of these lamented *confrères*.

*Foreign Relations of the American Medical Association.*—The American Medical Association accredited delegates during the last year to several foreign medical conventions, notably the International Medical Congress at Paris, the Dominion Medical Association of Canada, the Mexican National Association and the Pan-American Medical Congress at Havana. To each of these organizations the American Medical Association sustains relations of peculiar intimacy. As one of the great scientific nations of the earth, the United States is naturally an integral part of the International Medical Congress. This Association, by a resolution presented by your present executive

officer took the initiative in 1891, in organizing the Pan-American Medical Congress. The first reunion of that Congress was held in Washington in 1893, under the presidency of the late lamented Dr. William Pepper.

*Fiscal Affairs and the Journal.*—It has passed into unwritten law, born of the gradually developing features of our organization, that your President shall restrict his annual address to a discussion of the affairs of the Association and to the great object to which, by the terms of its Constitution, it stands consecrated—"the common interests of the medical profession in every part of the United States." In compliance with this rule, and realizing that I am leaving scientific questions to be presented by orators appointed for that purpose, I have pleasure in calling your attention to the satisfactory condition of the affairs of the Association, as indicated by consolidated report of the Treasurer of the Board of Trustees. From it you will observe that under the judicious management of your Board of Trustees you had a cash balance at the end of the last fiscal year of \$31,004.67, being an excess of \$3,696.66 over the preceding year. Your plant has been increased in value to the amount of nearly \$10,000.00, and the net profits of the *The Journal* amounted to nearly \$14,000.00. You will be gratified to realize that, in addition, you have safely invested as part of a fund with which to buy a home for *The Journal* and for the Association, the respectable sum of \$25,000.00. If, however, you have occasion to feel satisfied with the normal condition of your finances, you must contemplate with pride the rapid increase of your *Journal*, in quality, size, circulation and influence. The average weekly circulation grew, during the last fiscal year from 13,672 to 17,446, and I have added pleasure in informing you that, since the period covered by the report, the weekly circulation has grown to 22,000 copies. For the accomplishment of these splendid results, I feel that you will join me in hearty acknowledgment, not only of the sagacious management by the Board of Trustees, but the tireless industry and the discreet direction of our accomplished editor, Dr. George H. Simmons.

*Scientific Work of the Association.*—It must be acknowledged that great as has been the progress in this particular, too much of the time of our general sessions is yet devoted to the consideration of matters which might, with propriety, be relegated for final action to a similar body. It would redound largely to the interest of our annual session if the general membership could be entertained and instructed at our general meetings by exercises of a more purely scientific character, of such broad nature that they should not be re-

<sup>1</sup>Abstract of President's Address, delivered at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

stricted to any of the sections. A reform in this particular will be a long step in the direction of progress.

*Congressional and State Legislative Affairs.*—The American Medical Association, during the first fifty years of its existence, exerted relatively little influence upon legislation, either state or national. Since the Standing Committee on National Legislation and the National Legislative Council of delegates from the state societies have been established, and have become cooperative; there is some evidence that the voice of the profession is heeded at Washington. The experience of the splendid committee of the Association, acting in concert with the National Legislative Council during the last year, has, however, shown the serious necessity for more thorough organization in protecting the interests of the profession, and the interests of society as represented through the profession. In every war known to history the deaths from preventable diseases have exceeded those due to battle. At no time has hygienic science been so resourceful as at present in preventing disease. A law which fails to give to armies, either in peace or in war, the fullest protection by the application of the latest scientific developments at the hands of specially trained medical men is unjust to the soldier, to society, and to the medical profession. In view of these facts, the army reorganization law of the last Congress was inexplicable and inexcusable. The cause of failure on the part of this Association to procure legislation by the Congress—and with the exception of preventing the passage of the Antivivisection bill last year and securing the enactment of the Quarantine bill this year, our recent efforts must be recognized as failures—I say the causes of our failure are properly subjects for careful consideration. I have examined the records of the Association from the date of its organization, and have been profoundly impressed with the fact that memorials, resolutions, or even more definite propositions addressed to the Congress have, for the most part, represented the views, or rather the impressions, of the individual members proposing them. In view of the fact that, after all, the argument of votes is the only one which appeals effectively to the average Congressman, it behooves this Association, in its efforts to conserve the interests of the profession and of society, to put itself in position to influence the largest number of votes. Every physician, therefore, should, in a perfectly respectable sense, become an active working politician. This subject, however, is of such breadth and of such depth that it may be well for us to pause at this juncture long enough to consider, from the standpoint of fundamental facts, the relationship of physicians to each other, and of the medical profession in the aggregate as an integral factor in society.

*Voluntary Regulations of Medical Practice.*—A half century ago the American Medical Association was organized with the avowed object of having its members represent and take cogniz-

ance of "the common interest of the medical profession in every part of the United States." It sought to cultivate medical knowledge among its members, to elevate the standard of medical education, to promote the honor and influence and interests of the medical profession, and to enlighten the public concerning the relation between the medical profession and society. Emulation and concert of action in the profession and friendly intercourse among those engaged in it were additional aims of the founders of this great body of representative American medical practitioners. A constitution, by-laws and certain rules of conduct were adopted. The Constitution provided for a delegate body, delegates being accredited from recognized medical societies, medical schools and eleemosynary institutions. The rules of conduct prescribed in detail the deportment of a physician, the deportment of the patient, interdicted the licensure of sectarian physicians, and proscribed from consultation those whose practice was based upon an exclusive dogma. The influence of the new Association was extended chiefly through the avenues of the various state societies, many of which adopted the rules of conduct that had been prescribed by the newly formed national body as the basis of affiliation. Several of the state societies, notably those of Massachusetts, Rhode Island and Mississippi, finding either that the prescribed rules of conduct were not suitable to their respective local conditions, or feeling that they were sufficiently in touch with the ordinary forces of civilization to require no such formulæ, never adopted the rules of conduct prescribed by the national body. The medical association of Alabama adopted the rules with rather a naïve proviso that somebody be appointed to call attention to such of the special teachings of these rules "as may seem to require elucidation in view of special circumstances and conditions." Other state societies adopted more or less modifying resolutions, but the general spirit of ostracism and aloofness was maintained during the succeeding three decades. The result of this movement was immediately salutary; it developed an *esprit de corps* in the great body of the profession; it gave an authoritative definition to medical education, and it created a strong and influential national body within the profession. At the same time, however, it became apparent that the organization did not possess the necessary inherent strength to accomplish its avowed object to regulate the practice of medicine. As time passed schismatic medicine grew apace, its colleges multiplied, its practitioners appeared all over the country, exemplifying that law that always makes the blood of the martyrs the seed of the church. Quackery of the most flagrant character was found everywhere, and society was unprotected from its ravages, while the inability of a voluntary unchartered organization to enact and to execute plenary laws was reduced to a demonstration. The medical profession, as an organized body, discovered that its relation to the commonwealth was, as the result of its own



proscriptive policy, scarcely more intimate or more influential than at the beginning of the thirty years' hopeless experiment.

*Effective Legislative Control of Medical Practice.*—The era of effective legislative control of medical practice came as the natural reaction from the demonstrated failure to accomplish the same result through voluntary organization; but it came as the result of the sentiment which had been propagated largely through the influence of this Association. The representatives of progressive medicine, turning from the National Association invoked the aid of their respective state societies in taking up the question with their respective legislatures. The profession in each state, however, recognizing its own local conditions, proceeded in its own way to attend to its own business. The very earliest attempts to secure state legislation revealed the fact that the so-called irregular practitioners, under the stimulus of ostracism and the fostering care of public sympathy thereby induced, had become so numerous and so influential that in the majority of states nothing could be done without their co-operation. It was no longer a theory, but a condition with which the real reformers were confronted—and they met it. California, in 1876, through its regular medical society, took the initiative. After conferences with the representatives of the sectarian societies, and after securing their co-operation, a law was procured creating a licensing board composed of representatives of both the regular and sectarian schools of practice. Illinois, confronted by precisely the same condition, took precisely the same course. Alabama, always progressive, but the happy possessor of other conditions, was able to place the regulation of medical practice for the time being under the control of its incomparable state medical association. Colorado created a mixed board. New York, confronted by conditions even more complicated than those in other states, took up the same task. The profession of that state, acting through its organized body, containing among its members many of the most honored and illustrious names in American medicine, found it doubly necessary to enter into treaty with the denominational physicians. It realized, however, that the rules of conduct to which it had always conformed contained, among other provisions, one which made it unlawful to "examine or sign diplomas or certificates of proficiency for, or otherwise be especially concerned with the graduation of, persons whom they have good reason to believe intend to support and practise any exclusive and irregular system of medicine."

As the thing expressly interdicted by this rule was the very thing which it was proposed to do, and which had been done in other states, and which was very necessary to do in New York, the medical society of that state amended the rules of conduct so that it or its members might, at discretion, enter into professional relations with any or all persons whom the law of the state at that time recognized to be practitioners of medicine.

When this action was brought to the attention of this national body it resulted, not as might have been expected, in the amendment or the abrogation of the rule which had grown obsolete in the march of events, but in its tacit reaffirmation and in the opprobrious excommunication, for the time being, of the entire profession of the great Empire State. This action, viewed impartially after the lapse of nearly twenty years, becomes the more extraordinary when it is observed that similar action was never taken with regard to Massachusetts or Rhode Island or Mississippi, the societies of neither of which had ever adopted the prescribed rules of conduct; nor with regard to California or Illinois or Colorado, each of which had, by overt act, if not by open declaration, so far as this rule is concerned, taken an equally non-conformist position. It is not surprising that, with such an example before the state societies, the experiment in consistency has not been repeated. But the movement of effective regulative legislation, once inaugurated, happily spread with great rapidity. Mixed boards of licensure are now to be found in the majority of the states of the Union, and in the majority of such boards are to be found members of the American Medical Association engaged in issuing licenses to practitioners of exclusive dogmas, and sitting in consultation with sectarian physicians, not over a dose of medicine, but over the vastly more vital question of the qualifications of those who are to care for the sick of our Republic.

*The Medical Profession and Society at the Beginning of the Twentieth Century.*—The results of the twenty-five years of statutory regulation of medical practice are in striking contrast with the results of the quarter of a century of attempted regulations by methods of proscription. At the conclusion of that humiliating experiment, as at the beginning of it, there was not a single effective medical practice law on the statute books of a single state of the Union. To-day there are forty-eight state or territorial licensing boards, the most of them being composed of representatives of both the regular and the sectarian schools of practice. The laws of the different states are of varying efficiency, the one procured by the Medical Society of the State of New York, at the price of yet-maintained excommunication from this body, standing to-day as the model of excellence for the entire country. Under the influence of these laws, instigated by members of the American Medical Association, and which, after all, are but expressions of the sentiments of the medical profession confirmed by society at large, many substantial reforms have been accomplished. The medical schools which, in this country, have labored bravely and efficiently under adverse conditions, have been stimulated to increased efficiency. One of the first changes accomplished was the practical standardization of requirements to enter practice; and one of the first features of this standardization was to secure for the student

"the aids actually furnished by anatomy, physiology, pathology and organic chemistry"—the four cardinal studies which, strange-sounding as it seems, it was necessary solemnly and specifically to insist upon a half century ago. It follows, therefore, that with broadened and increasingly uniform curricula, it can not be said that schools even of sectarian antecedents entirely "reject the accumulated experience of the profession," nor can it be said that, in a sectarian sense, they any longer possess an excuse for existence. Their graduates, or such of them as do not base practice on an exclusive dogma, are, in many instances, met in formal consultation by even conservative regular physicians, and, in more than one instance, are made members of medical societies that are in affiliation with the American Medical Association.

*The Reorganization of the Association.*—The demand for more effective organization of the Association has come from all over the country and resulted in the adoption of a motion at Atlantic City authorizing the appointment of a committee of three to report a plan of reorganization at this session. Another motion was adopted authorizing the creation of a supplementary committee of one from each state and territory, entitled a Committee on Organization, which has been filled by appointing for the most part the retiring presidents of state societies for the current year. The Committee on Reorganization, consisting of Dr. J. N. McCormack, of Kentucky, Dr. George H. Simmons, of Illinois, and Dr. P. Maxwell Foshay, of Ohio, has given to the important question entrusted to it a most careful and painstaking deliberation. It has laid before you the results of its deliberation. In doing so it has emphasized the principle that this Association has its origin in the organized profession of the respective states. It emphasizes the fact that the delegate body should be so small that it can remain in prolonged session and give to various subjects under consideration that deliberate attention which has not been possible under the existing scheme of organization during the last forty years. It recognizes the paramount importance of the scientific feature of our work by relieving the general meetings and the sections alike of the troublesome details that now consume the limited and valuable time of the Sessions. It remedies the glaring and serious defects in the present constitution. It prepares the Association, by perfecting the organization, to meet important and pressing questions. These considerations, together with the fact that the existing constitutional provision relative to delay of action on pending amendments has been met by the appointment, a year ago, of a committee for the avowed and published purpose of reorganization, and by the action of the committee in laying the results of its work before every member of the Association—I say these considerations, and these facts, prompt me to advise the adoption of the proposed Constitution and By-Laws in

their entirety at the present annual session of the Association.

The Committee on Reorganization, under the restrictions of the resolution creating it, has, very properly, left undisturbed the existing rules of conduct. These, if construed to have a fundamental importance, and if vigorously enforced as they now stand, would disintegrate the Association in a single day. This reason, and others already given, confirm me in the conviction that such rules should be either amended or abrogated, or, if reaffirmed, it should be by general resolution endorsing their underlying principles but disclaiming the present applicability of their details. There are, however, various views entertained upon the subject, and that the matter may be approached in a spirit of tolerance may be discussed coolly and impartially, that a consensus may be reached, and that harmony may be attained, I recommend that the general questions of the revision of the rules of conduct be referred to a special committee on ethics, consisting of three members, with instructions to report to the legislative body at the next annual session of the Association.

*The New School of Medicine.*—The changes which I have advocated are essential for the attainment of the purposes of the Association and for the fulfillment of the high destiny of our National profession. They are demanded by the changes that have taken place during the last fifty years. The legislative functions have passed from voluntary organizations to the Congress and the legislatures, where they belong; but it still devolves upon the profession in the organized capacity, to stimulate, to restrain, or otherwise to control the law-making power. The responsibility of the profession is increased, rather than diminished. Science has come to have a clearer meaning. He who now proclaims a dogma cries alone in the night, while the world sleeps. They who demand a creed may read its varying terms only in the progressive revelation of natural laws. Practice has changed. The depletions, the gross medications, the absurd attenuations, the ridiculous antimineralism have given way to a refined pharmacy and to a more rational therapy. Sacrificial surgery has yielded to the spirit of conservatism. Prevention is given precedence over cure. Education implies research and discovery, and all may delve. I proclaim, events proclaim, the existence of a new school of medicine. It is as distinct from the schools of fifty years ago as is the Christian dispensation from its Pagan antecedents. It is the product of convergent influences, of diverse antecedent origin. It acknowledges no distinctive title, it heralds no shibboleth. It is a school of human tolerance, of personal independence, of scientific honesty. It is the slave of neither prejudice nor preconception, and abandons the accepted truth of yesterday, if it only be the demonstrated error of to-day. It places no premium upon personal prerogative, and extends no recognition to in-



dividual authority. It makes no proclamation of completeness, no pretention to sufficiency. It recognizes that truth is undergoing progressive revelation, not ending to-day, but continuing through the ages. It yields its plaudits to achievement, and recognizes that he is the greatest among men who reveals the most of truth unto men. It greets as a friend him who thinks, though he think error, for, thinking, he may think truth and thereby add to the common fund. It heeds all things, examines all things, judges all things.

To you, the exponents of this new school, of this new generation, of this new century; to you, representatives of the Democracy of Science; to you citizens of the Republic of Letters, I extend greetings; and here, in our parliament assembled, here, where our will is supreme, I this day invoke upon our deliberations the spirit of liberty, the spirit of courage, the spirit of progress, the spirit of truth.

#### INTERNAL MEDICINE IN THE NINETEENTH CENTURY.<sup>1</sup>

BY N. S. DAVIS, JR., M.D.,

OF CHICAGO.

It is one of the duties of those who address you, as I do to-day, to review what has been newly discovered in the field of medicine or in some limited department of it. At this first meeting of the American Medical Association in the twentieth century, it seems most natural to review what has been accomplished in the last one hundred years. The time at my disposal is too brief to read to you a complete history of the achievements of this wonderful epoch, for more of genuine advancement has been made in medicine during it than during all the preceding centuries together. It is only possible for me to point out some of the reasons for the rapid development of medicine, to recall to your minds some of the most important discoveries and applications of them.

The wonderful, the revolutionary discoveries made by students of internal medicine during the nineteenth century are not always appreciated as they should be, for their results are often demonstrable only by statistics; and the dramatic rescue of individuals from certain death which the surgeon at times accomplishes, unfortunately cannot be effected by the therapist. It is not in the nature of his art. Great progress, however, has been made in the use of medicines and remedial procedures. Good reasons can be given for their employment, and their mode of action can be explained. Empiricism no longer governs their use as it formerly did. The placing of therapeutics upon a scientific basis began in the last century when the physiological effect

of drugs was first demonstrated by experiments upon animals.

No field of medical research needs cultivation so much or is more certain to yield a rich harvest than therapeutics. It is surprising that we have not a larger volume of accurate knowledge of the effect of drugs than we do possess. Of late pharmacology has been neglected for studies which have temporarily been more enticing to experimenters, such as bacteriology and experimental pathology. Moreover, a knowledge of these subjects is essential to enable a clinician to apply his therapeutic resources to the mitigation of suffering, the support of strength, and the elimination or destruction of noxious substances. One can safely prophesy that the exact utility and the limitations of drugs and medical procedures will be defined in the present century.

To accomplish this, not only is more knowledge required of the physiologic action of drugs, but also better means of accurately measuring their effects when they are given to patients. We know when pain is relieved we can sometimes measure effects produced upon the heart and blood-vessels and temperature. Beyond this we depend for knowledge upon the impressions of physicians, impressions which must be corrected and often reversed by a wide experience. Clinicians possess only a few appliances or methods for the exact study of the sick. It is to be hoped that more will be discovered, and that they will also make it possible to register with accuracy the effect of drugs. When this is accomplished, undoubtedly a smaller number of useful drugs will be employed, but these with greater exactness.

It is true that more drugs are used to-day than need be, because patients demand them as a fetish; but this will be changed when laymen learn that it is the function of the physician to teach them what to do to give Nature the best chance to effect repair, what to do to make themselves comfortable and to preserve life. Then they will learn that it is a physician's function to teach them how to protect others from the same ailment, to foretell the possibility of recovery or death, and to avert or forestall complications. Medical men should include time and faith in their materia medica as an important means of effecting a restoration of health. I do not mean faith in a fetish procured in an apothecary's shop, but faith in the wisdom, honesty and disinterested devotion of physicians which will enable them to accomplish all that can be done for the suffering.

Although the greatest discoveries in the field of internal medicine have been applicable to the prevention of illness in the masses, much has also been done to increase the chances of recovery of individuals who are sick. I need call attention only to a few of the improvements in treatment which have been effected

<sup>1</sup> Annual Oration in Medicine, delivered at the Fifty-second Annual Meeting of the American Medical Association, held at St. Paul, Minn., June 4-7, 1901.

to remind you of more. Typhoid fever, which has been a scourge in all civilized countries, and constantly present in all large centers of population, has not only been greatly lessened, sometimes even suppressed by improved hygiene, but the chances of recovery of the one who is sick with it have been increased several fold by improved methods of treatment. Twenty-five years ago the mortality from typhoid fever in the hospitals of the world was from 20 to 35 per cent.; to-day it is from 5 to 15. The better results are due to the cold baths which are used, to a more generous supply of fresh air, to proper feeding, and to protection against, or the prompt treatment of, complications.

One great therapeutic discovery has been made at the end of the nineteenth century—the discovery of antitoxins, the natural antidotes to the poisons of infectious agents. For a very long time it had been known that something developed in the human system during the course of many ailments which gave to the sufferer from them for a variable time immunity from a recurrence of the same disease. Until the existence of parasites and of poisons generated by them was proven, an antitoxin was of course unrecognizable. Moreover, the possibility of such a thing in diseases, one attack of which did not cause immunity to others, was not even suspected. But the diphtheria antitoxin, the most efficient of those of which we know anything, is one belonging to this last group of ailments. The chemical composition of antitoxins is yet to be discovered. Since antitoxin has been used the mortality from diphtheria has been reduced about one-half. The most extensive collection of statistics gathered from all civilized countries shows that when antitoxin is used on the first day of the disease, the mortality is 5 per cent., increasing rapidly to 30 per cent. when used on the fourth day or later. Before its employment, the average mortality of the disease was from 25 to 35 per cent. To effect a still greater reduction in the death-rate from this ailment, it is necessary that it be recognized early, and that antitoxin be employed more generally as a preventive for those who have been exposed.

That tetanus antitoxin and plague antitoxin are valuable is admitted. Many others, such as pneumonia, typhoid, tubercle, scarlet fever, erysipelas and streptococcus antitoxins are still in the experimental stage. But even though it should be found that few natural antitoxins can be isolated for use as remedies, those already discovered confirm physicians in the hope that specifics will be found some day.

Another therapeutic discovery made at the close of the century which has thrown a flood of light upon some obscure points in physiology and pathology, and has restored to usefulness many who were formerly incapacitated and incurable, is that of internal secretions,

and especially the rôle of the secretion of the thyroid gland. Ingredients in the thyroid, suprarenal bodies, and ovaries, produce as definite effects upon the living body as many extracts from plants or synthetic chemicals. The pituitary body, the thymus, and bone-marrow may also have a value as yet undetermined. The rescue of those suffering from myxedema and cretinism by the administration of thyroid is one of the few happy dramatic incidents which fall to the lot of the practitioner of medicine.

That a much larger proportion of recoveries from tuberculosis occurs to-day than formerly is evident from the statistics of this disease, but this lessened mortality is not due to prevention only. Trudeau has estimated that 18 per cent. of all persons have tuberculous lesions, because a reaction to tuberculin can be demonstrated in that proportion. This statement is confirmed by Councilman, who states that his autopsy statistics show that at least 17 per cent. of all who die have had this disease. But in spite of this prevalence the mortality from the ailment is lessening.

Rabies and tetanus are two diseases which until recently were thought to be incurable. Rabies can be suppressed by killing unowned dogs and by muzzling the rest. Upon this point the following statistics from England are very instructive. In 1887, 217 deaths occurred in Great Britain from rabies; in 1888, 160; in 1889, 312. A muzzling law was then enforced. In 1891 the death-rate from the disease fell to 129; in 1892, to 38. The muzzling ordinance was repealed, with the result that in 1894, 248 deaths occurred from mad dog bites, and 672 in 1895. Again muzzling was made compulsory. The death-rate once more diminished; in 1897 it was 151; in 1898, 17; in 1899, 9, and in 1900, none!

Tetanus, quite common in hospitals formerly, is now prevented by properly cleansing and protecting wounds. It has become so rare a disease that to-day most students do not see a case of it during their college course.

The nineteenth century will be known in the history of medicine as the century of experimental medicine, for it is in that field that the greatest discoveries of the age have been made. The names of Pasteur, Koch and Lister will forever be linked with it as representing its greatest achievements. But these achievements would not have been possible had not the physicist perfected the microscope, and had not Virchow and his pupils explored the field of cellular pathology to its farthest limits. Around Virchow's name as a banner will historians gather the achievements in medicine during the early and middle portions of the century, and around Pasteur's those of its close.

If our greatest needs conditioned the growth of knowledge, we could prophesy what will be the great field of research of the twentieth



century, but history teaches us that our needs can often not be met until some sister science has grown, or new methods of experimenting have been devised. Therefore, the future must remain a blank to us. However, we are more apt to accomplish what is needed if the problems are kept clearly in mind. We greatly need more exact methods of clinical study, more accurate knowledge of the effect of remedial agents and procedures, but more than all else we need a knowledge of the changes which take place in the living tissue in health as well as in disease.

The anatomist has resolved the cellular structure of the body; the physiologist, the laws which govern the action of its organs and the chemic changes which are wrought upon its surfaces; the bacteriologist has discovered the parasites that infest, and often destroy it; the pathologist has described the anatomical changes which disease produces; the clinician has linked all these facts together and has discovered ways of seeing with the intellectual eye disturbances of physiologic function, of determining their cause, and of anticipating the anatomic changes which they will produce. But this does not satisfy us; we want a knowledge of the atomic and molecular structure of cells, of the changes which take place in the atoms and molecules in health and in disease, and of the effect of medicines and remedial procedures upon them. This knowledge chemistry must give us. I feel sure that, standing as we do at the beginning of a new century, expecting greater developments in it than in the last one, we are halting before new discoveries in chemistry, waiting for new methods of studying metabolism in microscopic portions of tissue. When this knowledge is vouchsafed, medicine will make another stride as great as was made when, by the perfected microscope, cellular pathology and bacteriology became possible.

Let us look forward with confidence to the Virchow and the Pasteur of the future.

#### THE VALUE OF CLINICAL MICROSCOPY, BACTERIOLOGY AND CHEMISTRY IN SURGICAL PRACTICE.<sup>1</sup>

BY JOHN A. WYETH, M.D.,  
OF NEW YORK

FOR many years, almost without exception, my predecessors in the address on surgery have devoted their labors to the exposition of some general or special subject in the domain of operative surgery, and while I would in no measure detract from the value of a thorough technical knowledge, we should not in our attention to the art, fall short of a proper appreciation of the science of surgery.

The experienced surgeon soon learns that it

requires more than asepsis and the rapid and skilful performance of an operation to achieve the fullest measure of success; that although a thorough practical knowledge of regional anatomy is essential in the highest degree to the conscientious fulfilment of the professional obligation, it is equally important that there be called into requisition the invaluable aid which laboratory research alone can give in determining an accurate diagnosis; in indicating the most rational measures of treatment not only in the preparation of a patient for an operation, and in the selection of the safest anesthetic, but for the post-operative management of the case, and in removing as far as possible all doubts as to the prognosis.

*Chemical analysis* of the normal and abnormal secretions and excretions of the body, *clinical microscopy* and *bacteriology* should form a part of the educational requirement of every surgeon. I do not insist that the busy practitioner should attempt to master all the intricate processes of the laboratory, for this is only possible to one who devotes years of patient labor in the fascinating department of science, but he should possess that practical knowledge of chemistry of the body in health and disease, and of clinical microscopy and bacteriology which any diligent student, under a competent teacher, and in a properly equipped laboratory, should be able to acquire in a three months' course of study.

The instances are exceptional in practice where this knowledge cannot be applied with great benefit to the patient, and with satisfaction to the surgeon. It is naturally of greatest value in the cases where no emergency for immediate operation exists, but its advantages are not wanting in these rarer cases, since it comes to his aid in the post-operative period.

To the surgeon, one of the most gratifying results of the great triumph of the laboratory in the treatment of diphtheria is the fact that he is now rarely called upon to perform the operation of tracheotomy which was formerly distressingly frequent; nor to witness the sufferings associated with intubation of the larynx. A professional friend in the department of diseases of children informed me recently that whereas a few years ago he had from 10 to 20 intubations of the larynx on account of diphtheria in every month, he now, since the serumtherapy was practised, averaged only one or two.

I believe that what is true of this disease is true of all infectious processes, and that as our knowledge expands, a safe immunizing serum will be discovered for each special toxemia. Even now it would seem that this proposition is proved in other infections in which like diphtheria the pathogenic organisms are localized at the seat of infection, their toxic products alone entering the tissues through the circulation.

Tetanus toxemia, or "lock-jaw," the organism producing which was discovered by Nicolaier in 1894, and which for years has baffled the most strenuous efforts of the bacteriologist and clinician, seems at last to be classified with the con-

<sup>1</sup> Abstract of the Oration on Surgery before the Fifty-Second Annual Meeting of the American Medical Association at St. Paul, Minn., June 4-7, 1901.

trollable infections. Professor Osler, in the last edition of his "Practice of Medicine," says the immunizing serum of Tizzoni has been successfully and encouragingly employed in doses of 2.25 grams for the first dose, and 0.6 gram for subsequent doses. Of 113 cases treated by this method 63 per cent. recovered.

The practitioner who has not called into requisition the invaluable aid which bacteriology affords in the differentiation of those too often obscure intraperitoneal lesions, cannot appreciate the satisfaction which this practical application affords. How often the safety of a patient hangs upon even a few hours' time, and alas, how often this precious time is wasted in the uncertainties of diagnosis, when a resort to the demonstration of science, available to all, would have plainly indicated the proper method of procedure. We know too well the fallacy of relying upon the ordinary subjective symptoms, and even some of the objective symptoms afford us no accurate clue to the pathological process which may exist. The pulse and the temperature of commencing typhoid may well be mistaken for the pulse and temperature of an appendicitis. The pain and muscular resistance over the right iliac and the right abdominal region are in many instances practically alike. The nausea, the vomiting, and the general sense of uneasiness point neither directly to the one nor to the other disease, but in a crucial test by Widal's reaction, with the blood-count pointing to the presence or absence of a leucocytosis, the question is quickly settled. I have seen all the symptoms of appendicitis present in cases in which the blood-count contradicted a pyogenic sepsis, and in which Widal's reaction told the story of typhoid. On the contrary, I have dealt with cases which ordinarily would have been most perplexing, in which all the symptoms of typhoid prevailed at a period when it was too early to recognize this disease by Widal's test, and a leucocytosis of from 15,000 to 21,000 proved at the earliest possible moment that the case was one for immediate operation.

In another fortunately rare disease, malignant pustule, caused by the lodgment in an abrasion of the bacillus anthracis, we are indebted to the laboratory for our knowledge of its etiology. The anthrax bacillus discovered by Devaine in 1863 is not usually found in the blood except in the most malignant cases, and in the last stages of fatal infection, but they can be demonstrated in the pustule of inoculation with the microscope or by cultures.

Not only does the laboratory come to our assistance in the diagnosis of certain obscure surgical lesions of the stomach, but it is still more valuable as an aid in arriving at the exact condition of the digestive functions of this organ, any derangement of which it is at times exceedingly important to correct in order to bring a patient into suitable condition to stand an operation. Thus it is important to determine in certain instances whether or not free hydrochloric

acid exists in this organ, and while the total quantity poured into the stomach in the digestive process cannot be accurately measured, clinical chemistry can closely estimate the total quantity found at a given moment during digestion. The acid-combining power of the proteids is known, and by certain tests it is feasible to estimate sufficiently close for a satisfactory diagnosis, the quantity of hydrochloric acid secreted. The small quantity of hydrochloric acid which combines with ingested inorganic elements is lost to gastric digestion, serving as it does its function in this process in the intestines.

A study of the discharges from the rectum is as yet of little value to the surgeon. Beyond the recognition of blood or pus, or cast-off cell elements in certain malignant neoplasms, there is but a single organism which is of real diagnostic value, namely, the amoeba of dysentery, described by Lamb in 1859, which is a motile mass of protoplasm about 20 micromillimeters in diameter containing a single nucleus, and one or several vacuoles.

In the differentiation between the pathogenic organisms of specific and non-specific urethritis, microscopy and bacteriology are our only infallible guides. They teach us to eliminate the various bacteria found in the external genital and urinary passages, not bearing directly upon the etiology of urethritis, and to recognize distinctly the two forms of diplococcus, the gonococcus of Neisser, and the pseudo-diplococcus, which, while not morphologically different from the specific disease-producing organism, can be readily distinguished by special modes of staining as well as by cultures. In the daily routine of practice the exact nature of every suspicious urethral discharge should be subjected to careful scrutiny.

The presence of the bacilli of tuberculosis in one or both kidneys, even when they are exceedingly infrequent in the discharge, can be demonstrated in urine drawn by urethral catheterization, or by the more simple process of bladder segregation, when the suspected organisms are with other detritus thrown down by the centrifuge.

In the effort to arrive at the general condition of a patient, the chemical, microscopical and bacteriological study of the urine is only second in importance to that of the blood, and when we consider the additional and exact information which can thus be obtained concerning any pathological process at any point in the urinary tract, the value of this analysis is very materially increased. A careful study of the urine is always indicated before determining what anesthetic it is safest to employ in the operation to be undertaken. When there is no important lesion of the heart, either in its valvular mechanism or in the blood supply and nutrition of its muscular walls, few surgeons, I hold, would employ ether in a protracted operation in which there was any suggestion of an acute nephritis, or in certain chronic forms of Bright's disease.

The presence of oxaluria is in my opinion a



contra-indication to a serious surgical operation, for the reason that it is pathognomonic of a disturbed nutrition due to insufficiency of the digestive fluids, and to fermentative processes in the intestinal tract.

The chemistry and microscopy of the urine further informs us when ammoniacal decomposition of the urine is taking place within the bladder, suggesting insufficiency of this organ due to obstruction of the urethra or to atony of the bladder muscle. The large rhombic masses or stellate and cross-shaped rosettes of the triple phosphates only exist in these abnormal conditions of the bladder, and with the brownish-colored, thorn-like crystals of urate of ammonia are important aids to diagnosis.

The presence of epithelia from the various portions of the urinary or genito-urinary tract, of spermatozoa and various bacteria chiefly pyogenic in character, are further and well-recognized evidence of the value of the microscope in surgical diagnosis. In rarer instances, the hooklets of echinococcus, the embryos of filaria and the ova of hemotobium Bilharzii are thus discovered in the urine.

When blood is found in the urine as a complication of papilloma of the bladder, particles of the broken-down tumor are very frequently found in the urine, and under the microscope the epithelial elements of this neoplasm are easily recognized and point clearly to the source of the hemorrhage. In hemorrhage from the kidney substance blood casts tell unmistakably of its source.

To-day, one of the most attractive subjects of laboratory research is the blood. Although hematology is practically in its infancy, many valuable discoveries have already been made, and in the proper study of a patient, a knowledge of the blood is as essential as that of the urine. It may throw no light upon many cases, but the reward will be tenfold in that particular instance where the diagnosis is made definite and clear. It is necessary to know the normal blood thoroughly by constant practice in order to recognize the abnormal changes which may be present in a given case, and I can think of no more useful way of spending the time not taken up by practice than by going over these important features of laboratory technic.

A knowledge of hematology enables the surgeon to detect any form of anemia and to determine whether it is a type of blood impoverishment which can be corrected, or whether it is of the graver or more pernicious forms which would either preclude an operation, or, if this were absolutely necessary, would enable him to announce to those entitled to information, the gravity of the outlook. In ordinary practice it is not always essential to differentiate between a pernicious anemia or a leucemia, or whether this latter condition is present in the lymphatic or splenic-myelogenous form, for the reason that all of these graver varieties call a halt to operative measures when these can be avoided. But

the anemia which comes from malnutrition or malaria, or chlorosis, can be positively diagnosed by a study of the blood.

The richness of the hemoglobin may in a fair measure be determined by the comparative color test of the blood in proper solution, as observed through Von Fleischl's hemometer. When a low percentage of hemoglobin is present, it is an indication to avoid any operative shock until the impoverished condition of the blood can be corrected by proper nourishment, by rest, or by medication, when this is positively indicated. This also suggests the aid of the microscope in a further investigation as to the condition of the corpuscular elements of the blood.

The surgeon would be extremely unfortunate to fail in the recognition of these often obscure lesions, and if possible to correct them before subjecting his patient to the severe ordeal of an operation. In the early recognition of septic processes—chiefly pyogenic—surgery can no longer disregard the value of the blood-count, especially the estimation of the leucocytes.

The relative number of leucocytes in a given quantity of blood, or their proportion to the red corpuscles, can be readily determined by the use of the Thoma-Zeiss apparatus which, as is well known, consists of two pipettes, one for the red and one for the white, with a well outlined and peculiarly constructed slide or counting apparatus, and employed with the ordinary one-sixth laboratory objective. The differentiation by the use of the Daland hematocrit, is not considered sufficiently exact to be satisfactory in the hands of the majority of hematologists. It is essential in making these differentiations to bear in mind the normal conditions that at the sea level the average number of red cells per cubic millimeter is 5,000,000 in men, and 4,500,000 in women, and 6,000,000 in the young and more vigorous adults, while the white cells average about 7,500 per cubic millimeter for each sex.

Certain conditions not considered normal, influence the number of leucocytes since in the latter months of pregnancy they are moderately increased, and after parturition, and during the early weeks of lactation, a leucocytosis may be present, without pathological significance. After hemorrhage the leucocyte count is increased, and in diphtheria, erysipelas, trichinosis, all extensive forms of endometritis and all acute pyogenic processes, leucocytosis exists except in those cases where the vitality of the individual has been overwhelmed by the severity of the septic process, under which condition the leucocytes no longer respond to the demand for the protection of the tissues, and are not present in the superficial blood in even normal proportions. It is probable that the application of this knowledge is more profitable at present in the study of the various lesions of the abdominal and thoracic organs. We know that in a certain proportion of cases of infection, temperature does not always indicate the increasing gravity of the lesion, while the degree of sep-

sis can be in great measure determined by the leucocyte count. In impaction of feces, extra-uterine pregnancy, floating kidney, gall-stone, renal colic, ovarian neuralgia, intussusception, volvulus, inguinal hernia, twisted pedicle, etc., there is no leucocytosis unless complicated with an acute septic process. In abscess of the liver the leucocyte count ranges from 12,000 to 48,000, while there is a well-marked increase in all the septic pyogenic processes of the lungs and the pleura.

In osteomyelitis the leucocyte count ranges as a rule from 15,000 to 25,000, and at times higher. Since in the early stages of this disease it is at times difficult by subjective symptoms to differentiate between rheumatism or gout, the leucocyte count is invaluable in demonstrating at once the pyogenic process.

In that very rare disease, trichinosis, the leucocytes register sometimes as high as 30,000, but the special feature is the presence of a large number of eosinophile cells, sometimes as high as 50 per cent., and in rare cases 67 per cent. of the total number of leucocytes being this form of corpuscle. A very considerable number of cases have been reported within the last year in which the diagnosis has been determined by the presence of eosinophiles.

#### THE PROGRESS AND TENDENCY OF HYGIENE AND SANITARY SCIENCE IN THE NINETEENTH CENTURY.<sup>1</sup>

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HYGIENE is a department of medicine whose object is the preservation and promotion of health and deals, therefore, with all the factors likely to influence our physical welfare. It is not an independent science, but rather the application of the teachings of physiology, chemistry, physics, meteorology, pathology, sociology, epidemiology and bacteriology to the maintenance of the health and life of individuals and communities. The subject is very properly divided into personal and public hygiene. In the former the doctrines are applied to individuals, in the latter to communities and States.

This branch of medicine has received such an impetus within the last few decades that many persons regard it of modern origin; such, however, is not the case, for on turning to early history we almost invariably find that the health of the population has been made a subject of legislation. Hygiene was practised by the Egyptians, the old Indians and Hebrews, and a study of the habits of the primitive peoples shows that a desire to prevent disease is innate to all men.

The Greeks and Romans paid special attention to the physical culture of their youth; they also paid much attention to the water-supply, and

Athens was provided with sewers at an early period of her history.

The teaching of Hippocrates, 400 B. C., doubtless bore many fruits, and whether it is true or not, as stated by Galen, that he ordered, during a pestilence at Athens, aromatic fumigation and large fires in the streets, we have at least his writings on air, water, soil, habitations and occupations and his views of local and seasonal influences on sporadic and epidemic diseases. In Homer's "Odyssey" reference is made to Ulysses purifying his house with burning sulphur, and Aristotle, in his "Politica," shows his sanitary acumen when he says: "The greatest influence upon health is exerted by those things which we most freely and frequently require for our existence, and this is especially true of water and air."

The Romans, amidst their military operations, found time to construct the "Cloaca maxima" about 2,400 years ago, which not only served for the removal of refuse, but also helped to drain many of the marshes, and constitutes the principal sewer of modern Rome.

*Pests and Insanitary Conditions of the Middle Ages.*—About this time most of the towns in Europe were built in a compact form, surrounded by walls; the streets were narrow and often winding for defensive purposes, shutting out light and air from the houses. The accumulation of filth was simply frightful. Stables and houses were close neighbors, human filth was thrown on the streets or manure heap. The dead were buried within the churchyards. Sewers and aqueducts having been permitted to fall into disuse, the inhabitants were compelled to resort to wells with polluted subsoil water. All the conditions were favorable for the spread of infectious diseases and in the fourteenth century alone the Oriental or bubonic plague, according to Hecker, carried off one-quarter of the population of Europe, or over twenty-five million victims.

The repeated invasion of the Oriental pest appears to have everywhere compelled some sanitary efforts and an imperial decree in 1426 required the appointment of city physicians throughout Germany, whose duty it was to adopt preventive measures. A city ordinance of Nürnberg in 1562 gives detailed directions as to the quality of bread, beer and wine offered for sale, the cleaning of streets and houses, the disposition of infected clothing and bedding, the fumigation with sulphur and straw of pest-houses, etc.

With such insanitary conditions we need scarcely be surprised that the mortality in towns was greater than their birth-rate and that the city population had to be recruited continually from the country. Toward the close of the eighteenth century many sanitary reforms were effected, however, especially in connection with infant and orphan asylums, and the management of schools and prisons. Of special importance is the brilliant discovery, or re-discovery, of vaccination by Jenner in 1796.

*Progress of Sanitation in the Nineteenth Cen-*

<sup>1</sup> Abstract of the Oration on State Medicine before the Fifty-Second Annual Meeting of the American Medical Association at St. Paul, Minn., June 4-7, 1901.



ture.—The nineteenth century can boast of many advances in hygiene, particularly since the European invasion of cholera in 1830. The English towns which had been visited by this disease and those fearing similar scourges were willing to profit by their sad experience and freely instituted sanitary reforms in the establishment of sewers, public water supplies, sanitary homes, etc.

The example of England was followed by all civilized nations with similar results. The efforts of sanitation, as taught by Dr. Parkes, were demonstrated during the Crimean War and, as beautifully expressed by Virchow during our Civil War, reached "the highest point in humane efforts ever attained in a great war," and we may proudly add have even been excelled during our late Spanish-American war.

*Progress of Sanitation in the United States.*—While the people of the United States were not slow in adopting and originating sanitary measures of great value, our ideas of personal liberty, guaranteed to us by the Constitution, evidently prevented early legislation in matters of public health, for fear that such legislation might affect the personal habits of the citizen and lessen his freedom of action. Dr. Samuel W. Abbott, in his masterly exposition of "The Past and Present Condition of Public Hygiene and State Medicine in the United States," records, however, the gratifying fact that the early colonists recognized the need of preserving their records, which constitute the foundation stone of public hygiene, by enacting a law in 1639 "that there be records kept of the days of every marriage, birth and death of every person in this jurisdiction."

The importance of vital statistics is not fully appreciated at the present day, and yet, as remarked by Dr. Billings, "when we wish to study the healthfulness of a city, whether it is getting better or worse, or judge correctly the effect of certain sanitary laws, we should not only know the number of deaths, but also the amount and character of the prevalent disease, together with accurate information as to the number of population at different ages." It is a matter of regret, therefore, that even now only ten States, Connecticut, Delaware, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Rhode Island and Vermont, have anything like a satisfactory system of vital statistics.

According to Abbott, "Up to the close of the eighteenth century and for several decades of the nineteenth, almost the only health legislation which was enacted in the different States in the Union consisted in a few laws relating to smallpox, since this pestilence was scarcely ever absent for many years at a time from any city or village, 'till after the general introduction of vaccination."

Dr. Waterhouse, of Cambridge, having secured a supply of vaccine lymph from Dr. Jenner, introduced vaccination in Boston in 1800, and Dr. Seaman in New York in 1801. In the same year President Jefferson received some virus

from Dr. Waterhouse and was vaccinated by Dr. Grant, of Georgetown.

*Health Boards.*—New Orleans having lost 8,000 victims of cholera in 1832, out of a population of about 55,000, and anxious to maintain a quarantine, secured the enactment of a law in 1855 for the establishment of a State board of health; in 1869 a more comprehensive board was established in Massachusetts, followed in 1870 by California, since which time nearly all of the States and Territories—forty-two in number—have followed the example. *Pari passu*, and in many instances preceding the establishment of State boards of health, sprung into existence our local boards of health, who adopted measures for the control and restriction of infectious diseases, for the abatement of local nuisances, for the sanitary inspection of the food-supply, schools, public buildings and institutions and tenements; street cleaning and removal of refuse, registration of vital statistics, supervision of burials and of municipal water-supply, sewerage, and sewage disposal, care of bathing establishments, regulation of offensive trades, etc.

In September, 1872, the American Public Health Association was organized; in 1873, the Section on State Medicine of the American Medical Association was created; since then the American Climatological Association, the Sanitary Council of the Mississippi Valley, the American Sanitary Association, and the American Health Resort Association have been organized, and numbering, as they do, among their members some of the best minds in the profession, much good has been accomplished by these bodies, and the so-called "sanitary conventions" in molding public opinion and in framing and recommending health laws.

Indeed, the American Medical Association, according to Dr. N. S. Davis, Sr., gave prominent attention to State medicine and sanitation from its first meetings. At the second annual meeting, in 1849, standing committees were appointed on forensic medicine and on hygiene and reported annually on these topics and on meteorology, medical topography and epidemic diseases until 1860, when work in sections was commenced. Dr. A. N. Bell, of New York, delivered the first address on State medicine in general session of the Association in 1874, followed in 1875 by Dr. N. I. Bowditch, of Boston. In this connection, I may say that there is need of reliable information on the geographical distribution of diseases like goiter, cretinism, etc., and county medical societies would contribute much to the common fund of knowledge by placing on record information of this character.

*National Board of Health.*—The cholera epidemic of 1872 and 1873 resulted in the appointment of a commission by Congress. This, together with the yellow-fever epidemic of 1878 in the Southern States, affecting, according to Sternberg, over 74,000 persons, with 16,000

deaths, called attention to the necessity of some central sanitary organization. In March, 1878, Congress created a national board of health, whose duty it was to make investigations into the causes and means of prevention of contagious and infectious diseases, to indicate measures of national importance and to be a center of information for all matters relating to public health. For want of appropriation this important body has ceased to exist, and since 1883 the duties relating to international and interstate quarantine have been discharged by the Surgeon General of the U. S. Marine Hospital Service.

*National and International Quarantine.*—The question of an efficient system of national and international quarantine against Asiatic cholera, yellow fever, smallpox, typhoid fever, bubonic plague, and leprosy has engaged the attention of sanitarians for years, especially since it became known that these diseases, particularly cholera, are generally carried along the highways of travel and commerce. General Wyman's plan, as outlined in his address before the Pan-American Medical Congress, contemplates an international system of sanitation; while his proposition refers especially to yellow fever in the Western Hemisphere, it is equally applicable to the home of cholera and the Oriental plague.

*Has Human Suffering Been Mitigated, and Human Life Been Greatly Prolonged by Efforts in Sanitation?*—Our answer is an emphatic "Yes." Professor Finkelnburg, of Bonn, estimates that the average length of human life in the sixteenth century was only between 18 and 20 years; at the close of the eighteenth, it was a little over 30 years, while to-day it is over 40 years; indeed, the span of life since 1880 has been lengthened about six years, as shown by statistics, in Mullah's "Dictionary of Statistics" (4th edition, London, 1899).

The mortality of London between 1660 and 1678 was 80 per 1,000 of inhabitants; from 1728 to 1780, 51 per 1,000; from 1801 to 1835 it was still 29, while at the present time it averages between 17 and 19 per 1,000.

Without underestimating the brilliant achievements of Jenner's discovery of vaccination in 1796, which as a preventive measure has saved millions of lives, no two factors have contributed so much to the general result as the improvement of the air we breathe and the water we drink.

The history of every sewered city shows a lessening of the typhoid death-rate subsequent to the construction of the sewers and that the typhoid rate is always higher in sections supplied with privy pits and box privies, than in the houses connected with sewers.

*Influence of Improved Water-Supplies.*—A summary of the evidence on this subject reveals the significant fact that cities, both at home and abroad, in which there has been the most marked decrease in typhoid-fever death-rate, are those in which a pure supply has been substituted for a pre-existing contaminated one.

When we remember that in 1896, 41 per cent. of our population lived in towns having public water-supplies, and only 28.7 per cent. in sewered towns, we fear that the municipal authorities have failed to recognize the necessity that a system of public sewerage must go hand in hand with the public water-supply, the neglect of which simply compels recourse to the various makeshifts for the collection and removal of excreta, and leads to soil pollution and all the other evils already referred to.

In view of the fact that self-purification of rivers is a slow and uncertain process, and that streams once polluted with excrementitious matter can not be considered a safe water-supply, it is high time for civilized communities to take steps toward removing the danger to be found in rivers, which are the sewers and at the same time the sources of public water-supplies.

One of the most pressing needs is an investigation into the pollution of water-supplies when such pollution affects or threatens to affect the sanitary condition of the people of more than one state, because the individual states are powerless to protect themselves against the misdeeds of their neighbors.

No community or individual has a right to pollute streams used for public water-supplies any more than a man has to contaminate his neighbor's well. This principle is very well appreciated by some of the nations in Europe. Thus the inhabitants of a town in Belgium suffered from the effects of a river polluted by the French and the French Government not only compelled the offending town to dispose of its sewage by irrigation, but also granted a subsidy for this purpose.

*Pure Food and Drug Legislation.*—The first movement toward securing comprehensive legislation against the adulteration of foods and drugs in this country was made in 1879. This is all the more surprising because Dr. Mann, in his "Medical Sketches of 1812," remarks that "the bread on the Niagara was made of damaged flour, such as was either not nutritious or absolutely deleterious." It was believed also that the flour contained in some instances an earthy substance, and that this adulterating substance was plaster of paris. Again, during the Civil War, as early as the winter of 1861-62, an extract of coffee furnished the troops in the vicinity of Alexandria produced nausea and vomiting, and subsequently a government contractor, for having practised food adulteration, was sentenced to a protracted imprisonment.

Some adulterations are harmful, others are not. I will simply refer to a very universal article of food, viz., milk. New York City obtains its milk-supply from five States, and amounted in 1896 to nearly 729,000 quarts a day. Analysis of the milk sold some years ago showed an average dilution with 33 per cent. of water. The State inspector found 12 per cent. water added and 20 per cent. of cream removed, the fraud amounting to over \$10,000 a day. The results



in St. Louis, Chicago, and elsewhere were similar, and indicated the desirability of stringent laws to protect the pocket of the consumer, but when we remember the frightful infantile mortality, and the fact that the speaker has recently presented his conclusions, based upon 195 epidemics of typhoid fever, 99 of scarlet fever and 36 of diphtheria and that 52 of these outbreaks occurred in this country since 1882, we see at once that the milk traffic should be under strict sanitary control.

**Laws Regulating the Sale of Drugs and Poisons.**—Forty-two States and Territories have enacted laws to regulate the sale of poisons, but a careful study shows that they should be amended, and greater restriction placed on the sale of poisons generally. A recent investigation by a committee of the Medical and Surgical Society into the extent of the opium and drug habit in the District of Columbia developed some interesting facts, and led to the conclusion that one class of subjects have developed the opium habit by the use of the milder preparation of opium and some of the various proprietary or secret remedies commonly employed as domestic remedies, such as paregoric, McMunn's elixir, chlorodyne, blackdrop, soothing syrup, diarrhea mixtures, pain-killers, etc. It is clearly the duty of the State to close opium dens and restrict the sale of poisons, and in regard to the sale of patent and proprietary medicines containing poisonous drugs, the contents should be expressed on the label and the word poison added.

**Patent and Proprietary Medicines.**—By the term patent medicine, as properly employed in this country, England and Europe generally, it must be understood that the composition is known and can be seen at the patent office. The proprietary medicine is a secret preparation protected by a trade mark in this country, and hence preferred by the owner, but both are vaguely termed by the public patent medicines. Up to December 10, 1900, the United States Patent Office had issued patents on the following: disinfectants, 321; extracts, 250; hair dyes and tonics, 48; insecticides, 180; internal remedies, 376; plasters, 56; topical remedies, 371; veterinary, 78. Trade marks: drugs and chemicals, 319; medical compounds, 5,974, and increasing at the rate of about 250 a year.

The proprietary medicines are subject to the control of the State authorities, and if containing alcohol in sufficient quantity to be intoxicants are subject to internal revenue laws; but, so far as my knowledge extends, little or nothing has been done in this country and in England to control the sale of secret remedies.

**Industrial Hygiene.**—The relations of occupation to health and life were studied as early as 1700 by Ramazzini, an Italian physician, and since then numerous monographs have appeared. We know to-day that persons habitually engaged in hard work, especially in factories and indoors, present a higher mortality than persons more favorably situated, and that the character of oc-

cupations influences, to a great extent, not only the average expectation of life, but also the prevalence of certain diseases. For all these reasons the laboring classes need special protection, and in order to render this efficient, it must be provided for by the enactment and enforcement of suitable laws. The first law as regards safety and sanitation was enacted in Massachusetts in 1877, since which time, from information kindly furnished by the Hon. Carroll D. Wright, of the U. S. Department of Labor, thirty-two States have enacted similar laws, including legislation requiring seats to be furnished saleswomen in stores and shops.

**Sanitary Dwellings for Wage-Earners.**—No field affords better opportunity for philanthropic work than the erection of sanitary homes for wage-earners at reasonable rentals, the encouragement of cookery schools, the establishment of sanitary lodgings, model eating-houses and other betterments of industrial conditions.

**Rural Hygiene.**—When we consider the fact that over 70 per cent. of our population reside in rural districts, that the "bone and sinew" of these are engaged in agricultural pursuits, and that they do not enjoy the benefits of enforced sanitation by local health boards, we see at once the desirability of the family physician extending useful suggestions on healthful building sites and homes, disposal of house wastes, the importance of a pure water-supply, wholesome and properly cooked food, etc. As it is now, the diet is faulty, especially the hot biscuits, greasy fried dishes, while wells and privies are often dangerous neighbors. The undue prevalence of typhoid fever in rural districts could be materially checked by disinfecting the stools with three times the volume of boiling water and the adoption of the earth-closet system. This is all the more important since infection is often spread through the milk-supply, and many of our urban population contract disease in the country during the summer months. While prompt disinfection of the excreta is the only rational method, we should also make an effort to get rid of the flies by prompt disposal of the horse manure in which they breed, the abandonment of open privies and surface pollution, removal of garbage and other fly-breeding matter.

**School Hygiene.**—During the year ending June 30, 1900, there were 15,341,220 children enrolled in the common schools of our country. When we consider that the mental and physical vigor of a nation depends largely on the environments of childhood and youth, it seems strange that up to within forty years little or no attention should have been paid to the hygiene of schools. The occurrence of so-called school diseases is not surprising when we reflect that children, on beginning school, enter upon a new life and environment. Up to this time they have been allowed to run and play in the open air, exercise the body and senses, without restraint, but now without a period of transition they are obliged to remain for several hours a day in close and

sometimes insanitary school-rooms, taxing their minds and straining their eyes for near objects. Experience teaches and statistics confirm the conclusion that quite a number of children suffer from certain physical defects and diseases, which, because rarely observed before the school period, may be justly attributed the school environments. Among the most common of these affections are myopia, lateral curvature of the spine, dyspepsia, anemia, muscular debility, headache and nose-bleed, nervous affections and tuberculosis.

*Smallpox and Compulsory Vaccination.*—In this connection, attention is invited to the undue prevalence of smallpox in the United States; the total number of cases reported to the U. S. Marine Hospital Service during the past fall and winter, up to March 29, was 11,964, as compared with 7,279 cases for the corresponding period of the preceding year, and it is doubtless due to neglect in vaccination. Dr. Abbott estimates the vaccinated portion of the inhabitants of the United States at not far from 90 per cent., and the revaccinated portion at probably 50 per cent. With the introduction of glycerinated animal lymph every vestige of prejudice against vaccination should cease, and compulsory laws should be enacted in every State, so that smallpox here, as in the Germany army, may become practically unknown.

*Veneral Diseases.*—A careful perusal of recent literature on the subject of venereal diseases should stimulate our efforts in the prevention of diseases, which affect not only the offender, but innocent wives, the offspring and not infrequently even the medical attendant. According to Fournier, one-seventh of the population of Paris is syphilitic, and Morrow, from statistics gathered in New York, believes it is quite possible that Fournier's figures, with some modification, may apply to New York. Neisser holds that gonorrhea is, with the exception of perhaps measles, the most widespread of all diseases. Other German authorities have computed that fully three-quarters of the adult male population and one-sixth or more of the adult females have contracted gonorrhea: that 80 per cent. of all deaths from disease of the uterus and its adnexa are of gonorrheal origin, while blenorrhea neonatorum contributes a contingent to our asylums for the blind estimated at from 10 to 20 per cent.—from 40 to 60 per cent. before the Credé method was instituted—not to mention the destructive effects on the procreative functions. Dr. S. M. Burnett, of Georgetown University, believes that 15,000 of the 50,000 blind persons in the United States lost their sight from this cause, which according to his calculation involves a financial loss to the commonwealth of seven and one-half millions annually.

The measures which have been proposed for the control of the social evil and the prevention of its consequences are numerous enough, but not so easy of practical application. On the whole I believe the remedy lies in public educa-

tion, and the task as usual falls on the medical profession, especially the trusted family physician. Public lecturers on the purity of man commit a serious mistake, however, when they picture the consequences of the social evil, without offering a suitable remedy. We should make a strong plea in favor of continence, and tell our young men that while the sexual passion is very strong it can be accelerated or delayed, excited or lowered by the influence of the will. We should assure them that by the cultivation of pure thought; removal of temptation, normal, mental and vigorous physical exercise, continence may not only become possible, but easy.

*The Management and Control of Infectious Diseases.*—It is the field of infectious diseases where preventive medicine has and doubtless will continue to achieve its greatest triumphs, and there is ample room, when we consider that during the census year of 1890 there were not less than 102,199 deaths from consumption, 74,496 from pneumonia, 74,711 from diarrheal diseases, 41,677 from diphtheria, and 25,058 from typhoid fever.

The eradication of preventable diseases is the highest aim of scientific medicine to-day. The public should be made familiar with the nature and causes of infectious diseases, and be taught that many are a source of danger, against which it is entitled to be warned by proper notification through the health officer. This notification should be made compulsory in cholera, yellow fever, smallpox, chicken-pox, typhus and typhoid fever, diphtheria and membranous croup, scarlet fever, tuberculosis, cerebrospinal meningitis, leprosy, glanders, bubonic plague, whooping-cough and measles.

*Disinfection.*—Scientific disinfection had its inception with the labors of Koch and Sternberg some twenty years ago. Although, as we have seen, certain physical and chemical agents were used empirically for ages, now we know from laboratory experiments that they are effective, because they destroy the vitality of the germs. We also know that, in most of the contagious diseases, the infective matter is given off by the patient chiefly through the secretions and excretions, and it is evident that disinfection to be of value must be directed to these and all the media with which the patient has come in contact.

*If Certain Diseases Are Preventable, Why Are They Not Prevented?*—My answer is that while every scientific physician familiar with biologic research knows full well that if the methods of prevention recommended by sanitarians, including the prompt disinfection of the dejecta of every typhoid fever patient, the expectoration and excretions of diphtheritic and tuberculous patients, for example, were adopted, these diseases would be reduced to a minimum and probably eradicated in the course of a few years. Nor are we responsible for the fact that so many of our States still permit every charlatan to practise one of the most difficult and responsible of all professions without a uniform and rigid sys-



tem of examination. However, we owe it to ourselves and to humanity to take positive steps in behalf of higher medical education and laws regulating the practice of medicine. So long as we permit the existence of irregular and incompetent practitioners, so long will the public be deceived and will we be obliged to compete with incompetent men, and so long as we tolerate the exponents of so-called "Christian Science," osteopathy, and other quacks, infectious diseases will be spread as the result of ignorance and neglect.

*Forecast of the Result of the Census Work upon the Mortality Statistics.*—Notwithstanding these and other disadvantages in the way of defective sanitary legislation, the American medical profession has reason to be proud of its work in the century's progress of hygiene and preventive medicine. It may be truly said that every hospital or other medical charity owes its foundation and success to the activities of the medical profession. Nay, every law inscribed on the statute books, in the interest of public health in this and other countries is the work of our noble profession. Acting upon the lofty principle that the education and betterment of the people in sanitation is not less humane than the healing of the sick, the American medical profession has filled the measures of its philanthropy by advocating laws to "regulate the health and physical well-being of communities," and thereby lessen its own income, but the results obtained during the last ten years are sufficient recompense. By the courtesy of Mr. Wm. A. King, Chief Statistician of the U. S. Census Bureau, I am enabled to give you a forecast of the result of the work upon the mortality statistics at the close of the century:

The mortality returns for the twelfth census, which relate to the year beginning June 1, 1899, and ending May 31, 1900, have not yet been tabulated in full, but sufficient progress has been made to permit a comparison of the preliminary results with the figures for 1890 for a portion of the country.

Considering these results for these States in which the returns were secured from registration records in both 1890 and 1900, there appears to have been an absolute decrease in the general death-rate of about 1.5 per 1,000 of population. This decrease seems to be most marked in the rates due to scarlet fever, whooping-cough, diphtheria and croup (combined), typhoid fever, malarial fever, consumption, diarrheal diseases, and diseases of the nervous system, the decrease in the mortality from diphtheria and croup amounting to more than 50 per cent. On the other hand, the rates due to carcinoma and tumor (combined), Bright's disease, heart disease and dropsy (combined), and pneumonia are apparently greater than in 1890, the increase being most marked in case of Bright's disease, carcinoma and tumor, and pneumonia.

The death-rate by age periods in the registration States has not yet been computed as the population figures are not yet available, but the

effect of the decrease in the rates due to the causes specified is shown by a decrease in the proportion of deaths occurring at each period up to 30 years.

The results in the decreased rate of diphtheria, croup, scarlet fever, typhoid fever, whooping-cough, consumption, malarial fever and diarrheal diseases are the direct outcome of preventive medicine and are as gratifying as they are striking. We note with regret the increased rate in Bright's disease, heart disease, dropsy and pneumonia, and may well pause to inquire whether our ever-increasing "National Drink Bill," averaging 17.68 gallons per capita, may not be a factor in the development of these diseases, especially since there is reason to believe that the habitual and immoderate use of alcohol, apart from increasing the connective tissue and causing cirrhosis, also produces fatty degeneration, especially of the heart, liver and arterial coats, probably because it promotes the conversion of albuminoids into fats.

Without wishing to underrate the brilliant achievements in surgery of the brain, stomach, intestines, liver, gall-bladder and other abdominal organs, and even wounds of the human heart which have been successfully sutured in four of the nine cases reported, what after all are the ultimate benefits compared with the results obtained by improved methods in sanitation? It appears that the universal application of sanitary laws often robs them of their human interest, where the opposite should be the natural effect.

Since our knowledge of the nature of infectious diseases has been more and more defined, scientific methods for their prevention have been applied. We have learned, too, that in addition to the germ there must be a suitable soil for its proliferation and that sanitation will not only destroy the environments for its development without the body, but also place the system in the best possible condition to resist its toxic action.

The application of this knowledge has saved millions of lives besides an incalculable amount of human suffering and distress, not to mention the economic aspect of the question which should appeal to the most mercenary.

To the solution of this problem, the labors of Salmon and Smith, Sternberg, Welch, Osler, Councilman, Reed and other Americans engaged in experimental medicine have contributed their full share. Progress has crowned our past, we will not retrograde. Let our conduct raise no blush on the cheek of posterity. Let us hand in hand with heart and mind join in promoting the welfare of American medicine, until she has reached the proudest pinnacle in the world of science, until she has become the fountain-head of knowledge for the benefit of mankind. Then when at last we are called upon to pass through the portals beyond, Minerva Medica, in her sweeping robes of state, will proudly but reverently present us to the Supreme Healer of the Universe as types of the true physician.

## MEDICAL PROGRESS.

**Ovarian Secretion.**—Referring to the effect of double ovariectomy and the influence of the ovarian internal secretion, W. E. DIXON (*Practitioner*, May, 1901) believes that the presence of ovarian tissue in the body, however small in amount, is sufficient to prevent the distressing symptoms which frequently follow complete extirpation. Even transplanted ovaries are sometimes able to prevent the induced menopause which is probably certain to occur if the ovaries are entirely removed. The administration of ovarian tissue by mouth exerts a beneficial influence on patients in whom menstruation has ceased in consequence of disease or complete ovariectomy. It has a direct effect upon metabolism as shown by the increase in weight due to the deposition of fat and the diminished excretion of  $P_2O_5$ . Evidence points to the theory that the ovary furnishes an internal secretion which favors catabolic changes.

**Saline Treatment of Dysentery.**—W. J. BUCHANAN (*British Med. Jour.*, April 13, 1901) presents a continued report of 855 cases of acute dysentery with but nine deaths—a little over 1 per cent. The solution used is as follows: Sodii sulphatis 3i, aquæ forniculi ad. 5i. One dram four to eight times a day. It is important that the stools be inspected daily, the saline being continued till every trace of blood and mucus has disappeared. Although this treatment has been severely criticised by the Medical Corps in South Africa as being too painful for practical use, Buchanan states that this is not the case if intelligent care be used in its exhibition. He states further that the saline is suited to the acute form only and should never be tried in the chronic. The diet in the Bengal Hospital consists largely of rice-water, boiled milk and tyre. This diet, together with daily inspection of the stools, is of paramount importance.

**Adrenalin.**—EMIL MAYER (*Phila. Med. Jour.*, Apr. 27, 1901) describes the characteristics of this drug and its actions, and presents a table showing the results obtained from its use in thirty-five cases. From his clinical experience with adrenalin, the active principle of the suprarenal gland, the writer formulates the following conclusions: (1) Adrenalin solutions supply every indication in rhinological practice for which the aqueous solutions of the extract have been hitherto applied; (2) they can be used in sterile form; (3) they remain unchanged for a long time; (4) a solution of 1 to 1,000 is very strong and is all sufficient for operative cases, and 1 to 5,000 or 1 to 10,000 for every purpose of local medication; (5) they may be safely applied to persons of every age and of either sex. Mayer believes that in the isolation of the blood-pressure-raising principle of the suprarenal glands we are confronting an epoch-making discovery, and that with the discovery in the near future of the active principles of other animal substances,

organotherapy will derive a new impetus and an exactitude in administration which will give these remedies a new power in our hands.

**Mixed Narcosis.**—H. BRAUN (*Münch. med. Woch.*, May 14, 1901) draws attention to the greater safety of ether-chloroform mixtures over pure chloroform and to the inaccuracies experienced in giving them with the usual masks. He recommends a specially constructed apparatus, which allows air to pass through both chloroform and ether, the amount of each being regulated by several levers. The anesthesia is induced with a mixture of both vapors, a bulb being pressed synchronously with the inspirations. As soon as complete relaxation is established, the lid-reflex still being present, the narcosis is continued with pure ether. If at any time the respirations should become too shallow, the ether should not be pushed, but chloroform added. In the majority of cases, the period of toleration was reached in 6-8 minutes and but small quantities were found necessary.

**Malignant Syphilis.**—As characteristic of the malignant form of syphilis D. LOCHTE (*Monatshft. f. prakt. Dermatolog.*, May 15, 1901) mentions the early appearance of numerous ulcerations over the entire body, loss of weight, fever and inefficiency of the usual antisiphilic remedies. Frequently generalized lymphadenitis is absent and the skin generally shows the most extensive lesions, which very early take on the appearance of tertiary change. Although mercury is often powerless, iodide of potash is frequently well borne; in most cases, however, the best results will be obtained from a preliminary course of tonics such as iron and cinchona. Renewed attempts with the iodides may then be made; if a tolerance is not established, iodothyrim may be resorted to. The causes of malignancy of syphilis in certain patients is not very clear, but certain diseases, as alcoholism, tuberculosis, scrofulosis and diabetes, are mentioned as lowering the resistance of the tissues to syphilitic infection.

**Hand Disinfection.**—P. G. UNNA (*Monatshft. f. prakt. Dermatol.*, May 15, 1901) recommends the following method: the surgeon on the night before the operation scrubs his hands with soap and hot water and then applies an alcohol dressing covered with gutta-percha. The next morning, superfatted soap is employed and the hands then dried with a sterile towel. Immediately before the operation, the superfatted soap, which protects the crevices of the skin, is then washed off.

**Action of Orchitic Extract.**—Ancient Roman and Grecian history contains many allusions to the use of semen or testes to increase the vigor of wasting manhood. In modern history Brown-Séquard seems to have been the cause of a revival of the use of this method which had been neglected during the medieval years. Results have been most conflicting, but experiments have recently been made to determine the changes of



metabolism which occur after its administration. W. E. DIXON (*Practitioner*, May, 1901) finds that it is probably the nucleo-proteid portion which acts nominally as an internal secretion and produces a specific effect upon metabolism. When taken by mouth an immediate hyperleucocytosis is produced, and the excretion of  $P_2O_5$  in the urine is increased, the increased excretion of  $P_2O_5$  being in excess of that contained in the nucleo-proteid. When injected subcutaneously there is a prolonged hypoleucocytosis and the phosphoric acid excretion in the urine is diminished. Furthermore, the latter method has a direct effect upon the heart and peripheral circulation. The heart is slowed and the action becomes more feeble and, mainly as a result of this effect, the blood pressure falls. There is also a dilatation of the peripheral blood vessels. The clinical value of this remedy is still unknown, although it has been recommended for various diseases, especially of the nervous system, by most able authorities.

**Treatment of Meningitis.**—Depending upon the age of the patient and the severity of the case, F. DAXENBERGER (*Klein. therap. Woch.*, May 12, 1901) has used 2-3 grams (30-45 grs.) of Credé's ointment twice daily up to a total of 10-20 grams (150-300 grs.) rubbed into the skin of the head or neck in cases of acute meningitis with some remarkable cures. At least fifteen minutes should be spent in the inunction and a resulting dermatitis is no contra-indication.

**Lumbar Puncture in Persistent Uremic Headache.**—In a case of uremia presenting albuminuria, high arterial tension and cardiac hypertrophy, MARIE and GUILLIAN (*La Méd. Moderne*, May 8, 1901) resorted to lumbar puncture for the relief of the violent and persistent headache, ordinary treatment having proven ineffectual. Six c.c. of cerebrospinal fluid were removed. The relief of excessive tension by this means was followed within two hours by a disappearance of the headache, and the symptom did not return for two days. The authors hold that there is a certain analogy between the hypertension of the cerebrospinal fluid in nervous uremia and that which is known to exist in cases of brain tumor. The indication for lumbar puncture in uremia is the continued presence of severe headache in spite of rigorous treatment of the underlying cause. It should not be resorted to, however, until analgesics have failed.

**Antistreptococcus Serum in Puerperal Infection.**—LUDWIG KNAPP (*Prager med. Woch.*, May 9, 1901) injects as first dose 10 c.c.; when negative result follows the dose is repeated after twelve hours, and a third dose is given twelve hours later if necessary. It cannot be said that this treatment has yet been satisfactory. The results have been either doubtful or absolutely negative.

**Causes and Treatment of Movable Kidney.**—M. L. HARRIS (*Jour. Amer. Med. Assoc.*, June 1, 1901) has made careful measurements in two hundred cases, including men, women and child-

ren, and argues that the essential cause of movable kidney lies in a particular body form whose chief characteristics are a marked contraction of the lower end of the middle zone of the body, with a diminution in the capacity of this portion of the body cavity. This diminution in the capacity of the middle zone depresses the kidney so that the constricted outlet of the zone comes above the center of the organ; such acts as coughing, straining, lifting, flexions of the body, etc., which tend to adduct the lower ribs, press on the upper pole of the kidney and crowd it still further downward. Continued repetition of these influences produces movable kidneys. In fixing a movable kidney, it is best to fix it low down, where it will not again be subjected to the influences which originally caused its descent.

**Acetopyrin in Rheumatism.**—This drug is recommended by CAPITAN (*La Méd. Moderne*, May 1, 1901) in cases calling for the combined therapeutic action of salicylic acid and antipyrin. It appears to have no objectionable action on the stomach. In forty cases of rheumatism treated by Bolognerie, rapid effects were produced by the administration of two to three grams daily, in divided doses. In rare instances some depression resulted, but no case of collapse is recorded. Temperature is said to be reduced at least  $1^{\circ}$  C. within an hour after the administration of a single dose.

**Diagnosis and Surgical Treatment of Renal Diseases.**—According to F. TILDEN BROWN (*Boston Med. and Surg. Jour.*, May 30, 1901) smegma bacillus leads to confusion in diagnosis; it is excluded by collecting urine by catheter from the bladder. In doubtful cases animal inoculation must be resorted to. Tubercle bacilli having been found in the urine, cystoscopic ureteral examination will fix the location of the lesion in the bladder or kidneys. In some cases the lesion is not in open communication with the urinary channels, and symptomatic diagnosis must be made. Lumbar pain may occur early. Frequency of urination indicates involvement of the lower segment of the ureter. The principal objective symptoms are enlarged and tender kidney; pyuria and hematuria, diurnal variation in temperature, loss of color and weight, reaction to tuberculin, tubercle bacilli in urine. The value of tube cultures is chiefly in the demonstration of the presence of other pathogenic microorganisms. Treatment consists of nephrectomy.

**How to Treat Muscular and Joint Sprains.**—HALDOR SNEVE (*Jour. Amer. Med. Assoc.*, June 1, 1901) points out that mere immobilization of muscles is not equivalent to rest; the muscles remain in a state of tonic contraction and can best be treated by passive motion from the beginning and active exercise later. Plaster casts are only to be used where it is impossible otherwise to maintain a proper position of the joint, as in some cases complicated with fracture. Ice over a wet cloth is useful during the first few hours; hot fomentations later where stimulation is needed. For strains the best treatment is the

counterirritation of static electricity in conjunction with massage. The best treatment for sprains is the ambulatory treatment with massage.

**Lobar Pneumonia "Cured" by Diphtheria Antitoxin.**—Following the suggestions of Talamon and Capitan, NEGEL (*La Méd. Moderne*, May 1, 1901) treated a case of frank lobar pneumonia in a man, fifty-eight years of age, by the injection of 20 c. c. of antidiphtheritic serum. This injection was given on the day the physical signs were detected, two days after the patient entered the hospital with symptoms of a common cold. The dyspnea at this time was marked; there was pronounced dulness over three-fourths of the right lung, and pronounced tubular breathing; temperature 39° C. The following day numerous râles were heard, temperature was 38° C., but the patient was still feeble. The serum injection was repeated—20 c.c. Twenty-four hours later temperature was 37.8° C. Crepitant râles were numerous, and resolution proceeded from this time without interruption.

**Use of Sulphur Waters in Endometritis.**—Natural and artificial waters containing H<sub>2</sub>S have been employed with success in the treatment of chronic endometritis by PERRIER (*Jour. de Méd. de Paris*, May 12, 1901). Associated lesions of the adnexa do not contra-indicate this treatment, but are even ameliorated by it. Caution is advised in cases having cardiac disease, advanced tuberculosis, uterine fibroma or general nervous irritability. Perrier believes that sulphur irrigations give more certain and more lasting results than curettage. They have been found useful, both in chronic catarrhal or purulent endometritis and in hemorrhagic or decidual cases.

**Muscular Action of Arteries.**—In commenting upon Dr. Daland's paper on arterial spasm A. H. SMITH (*N. Y. Med. Jour.*, June 1, 1901) says that too little attention is paid to the changes which occur in the muscular layers of the blood-vessels in cases of arteriosclerosis. Physiologically the whole arterial tree, to its minutest branches, is only a continuation of the left ventricle and is therefore a muscular organ. There is a positive muscular action following behind the volume of blood and it is caused by the stimulating action of the distention of the blood-vessel by the passing wave of blood. The condition of arterial spasm, therefore, not only increases the work of the heart directly, but also cripples the heart by depriving it of the aid it should have from the rhythmic muscular action of the arteries.

**Theories of Inheritance.**—Although medical men are continuously inquiring of their patients in regard to inherited conditions and diseases, they pay little attention to the theories which have been advanced relative to the method of transmission of such maladies. For many years Weissmann's theory that acquired

characteristics were not transmitted to offspring held complete sway and was very generally accepted. Recently numerous authorities have been disposed to doubt the validity of such an assumption and J. G. ADAMI (*N. Y. Med. Jour.*, June 1, 1901), after showing the difficulties in the way of accepting Weissmann's theory, suggests another seemingly reasonable cause for variation. According to Weissmann, the germ cell is made up of a vast number of ancestral plasms or "ids" derived from a long line of progenitors and as the ids in two fertilized ova are not identical, as the same series of ancestors do not contribute to the germ plasm of the two, so it is that individual variation originates. As segmentation goes on germ-cells are soon set aside and a certain series of ids passes into each cell as it becomes differentiated, the germ-cells receiving the full complement of all the ids. Wilson and Morgan have recently proven, however, that in a segmenting ovum if the cells be shaken apart at the two-, four-, eight-, or even sixteen-cell stage, each separated cell can be found capable of developing into an entire, if dwarfed, individual. Driesch suggests that the variation in structure of different tissues must be "a function of their relative position." Medical men are frequently confronted with conditions which are evidently inherited from ancestors that acquired those characteristics. In bacteriology, where generations are created so rapidly and hence the effect of external influences can be more fully and easily watched, there seems to be little doubt remaining that characteristics of a particular germ can be radically changed by environment and that this change is gradually transmitted to the progeny. The author suggests what he calls the "side-chain" theory of inheritance to explain present observations. He pictures the primitive idoplasm as composed of a mass of material each molecule of which is formed of a central ring to which there can be attached side-chains from which sundry side-chains can be detached without the central ring being destroyed. Thus, we suppose that there is a central basal substance to which become linked, more or less permanently, or more or less temporarily, those other secondary substances which, not in themselves protoplasmic, modify the constitution of the protoplasm as a whole. Two forces determine the structure of every cell in the body: (1) The previous influences acting upon its idoplasm and causing it to be of a particular chemical constitution, and (2) the position in which the cell finds itself in the body. The germ-cells naturally undergo very little change, but in terms of this theory inheritance depends upon the chemical constitution of the idoplasm, and variation, whether slight or extensive and leading to the formation of species, is the expression of modification brought about by environment.



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Subscription Price, including postage in U. S. and Canada

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SATURDAY, JUNE 8, 1901.

## THE MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

THE American Medical Association assembled for its fifty-second annual meeting on Tuesday morning, June 4, 1901. Everything was auspicious for a most successful gathering. A very large delegation came by special train from New York, many Philadelphians were present and for a Western meeting the present session had a representative character that promises well for the future of the Association. With the next meeting at Saratoga to arouse still further enthusiasm there is no doubt that conditions are all that can be desired. Important changes in the organization of the Association were effected at this meeting that give every reason to hope for more perfect union for every worthy purpose.

The address of the President, Dr. Reed, was worthy of the opening of the new century. There was a broad grasp of the interests of the medical profession at large in this country that stamps the retiring President as a man of striking liberality of view. He has studied the needs of the Association deeply and has a practical remedy to suggest for many evils only too manifest. His

expression with regard to the code and the unfortunate trouble over it was a masterpiece of good sense and impartial judgment. The President of the Association publicly recognized the good that had been done by the conduct of New York medical men, although it cost them their membership in the Association. He pointed out that with the beginning century so many scientific problems require solution and so many of the best interests of the profession are at stake, harmony on the basis of the most good out of the brotherhood must be achieved.

Among the practical features of the present meeting the discussion in the Medical Section have been especially noteworthy. Blood conditions came in for the share of attention that recent advances in blood work demands. In the discussion of these disorders forty cases of pernicious anemia were reported from Johns Hopkins Hospital and many striking facts were brought out. The great preponderance of male sufferers from the disease is especially noticeable. The low place that such supposedly active causal factors as worry and pregnancy take was a matter of surprise considering how much the etiological significance of such conditions has been generally conceded. The question of oral sepsis as a cause of the disease had to be touched on. Hunter's theory has at least called attention to how often hospital patients have septic conditions in their mouths, although the presence of such form of germs is only a coincidence not a causal element in pernicious anemia.

The discussion on appendicitis brought out nothing new, except, perhaps, the fact that medical men generally now frankly concede the surgical nature of the disease in almost every stage. In this medical opinion has changed very much for the better in the last five years. The new century opens with the surgeon in the saddle on all appendicitis questions.

New light was thrown on the difficult problem of cirrhosis of the liver and some eminently suggestive remarks were made in the discussion. The question of the old traditional biliousness as a possible preliminary of cirrhosis of the liver is startling enough. Its greater frequency than has been generally supposed is also a suggestive reflection of the trend of modern medical thought.

The meeting has been a decided success. St. Paul may well be proud of the magnificent welcome she extended and the 2,000 medical visitors will not soon forget the pleasant time spent in the capital of the Northwest.

#### A NEW INSTITUTION FOR MEDICAL RESEARCH.

NEWER developments in America have been leading more and more toward realizations in the field of scientific medicine. Conditions for the pursuit of higher research along medical lines cannot be said, up to the present, to have been overencouraging, but recent indications suggest possibilities in this direction whose outcome can be but tentatively estimated. A more intelligent appreciation of the needs along these lines by both the medical profession and broad-minded men generally justifies a hopeful forecast for the future.

An enterprise of extraordinary value and promise which will do much to further medical research work in this country is initiated by a corporation (Rockefeller Institute for Medical Research) which starts with a gift of \$200,000 from Mr. John D. Rockefeller. Its headquarters will be in New York City. The object of this new creation is to furnish facilities for original study of medical problems, bearing more especially on those questions whose answer should be of practical application in the prophylaxis and treatment of disease. Judging from information at hand, it seems probable that emphasis will be laid upon the prophylactic side which after all is the most logical aim of practical medical research; and, with this view in mind, it has already been suggested that one of the problems whose solution would for the present prove of even greater benefit to humanity than many other studies is the relation of milk-supply to gastro-enteric maladies of children. Experiments will be made in the laboratories of several leading universities, and one person will be sent to Europe to report upon the results of similar studies there.

But this represents only one of the features of the plan in view. Definite problems will be taken up, and as the work develops it is hoped that a permanent staff of competent workers will be organized.

Looking at it from a still broader point of view, this institution will probably fulfil the desires of a large class of advanced workers who have been unable to pursue original investigation to the best advantage. Many a medical man has felt the assurance that he might make contributions to medical science of lasting value if he could only be relieved of the exhausting work of his regular routine and could devote all of his energies to ad-

vanced study and research with suitable support and congenial entourage. The new institution is expressly designed to meet this difficulty.

Remarkably good sense is, in our opinion, shown in the decision to "feel one's way" toward the ultimate realizations of the institution rather than start with a completely formulated scheme which of necessity would have to be revised as the indications suggested. It is assumed that the \$200,000 gift is only a beginning, and that Mr. Rockefeller will be ready to provide the necessary buildings when the time is opportune and furnish whatever further funds may be required.

Under the management of a Board of Directors so admirably selected there can be no lack of confidence in the practical and beneficent results of this rich endowment.

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#### THE ARMY CANTEN.

MUCH adverse comment is certain to result from an expression by any important society of physicians of disapproval of the law now in force abolishing the canteen in the army of the United States; yet within the profession the propriety of joining vigorously in a memorial to Congress that shall set forth the desirability of re-establishing this institution must be readily recognized. The argument is neither long nor involved. The life work of the American physician is the care of the physical well-being of the American people, and when any question arises regarding a cause of action that will materially affect the health of a large body of our citizens, it is not only his privilege, but his duty to give expression to a positive opinion. That the abolishing of the canteen has seriously affected, and for the worse, the bodily soundness of a large number of people there can be little doubt. The testimony of the men in a position to observe, men of high standing, under no stress to misrepresent facts, for whom, indeed, the training of a life time has been that of the accurate observation and report of facts, is positive on that point. Their testimony is the more readily accredited in that it agree with the universally accepted narratives of past experiences. It has been a common experience for a prolonged campaign to bear in its train a wave of venereal infection that the disbanding of the armies has caused to roll through the



length and breadth of the unfortunate nation for which they have fought. There are psychological as well as practical reasons why the soldier in time of war is both more indulgent of his sexual desires and less painstaking in the effort to avoid infection than the civilian, and similar influences operate to render the resorts of the camp-followers more deadly than the bawdy houses of the city, and as frequently as these facts have been noted has come the further observation that the drinking-places outside the camp lines have been the feeders for houses of assignation.

There is this double plea for the canteen from the medical standpoint. By its tendency it keeps the soldier within the camp, providing him with a mild stimulant of pure brew, instead of driving him outside the lines for the satisfying of that craving which arises from the nature of his calling, it preserves his system from the shock of the vile concoctions which are sure to be foisted upon him when the purveyors to his appetite know he can get nothing else, and saves him also from venereal infection by failing to make fierce assaults on his moral stamina and natural self respect. For, so repulsive are the great majority of female hangers-on at the outskirts of a military camp, that the lowest grade of the American soldier must needs have his senses dulled by something far more potent than canteen beer, ere he can bring himself to intimate association with them.

There was a strong representation of the medical branch of the army at the meeting of the American Medical Association at St. Paul this week. Unanimously and emphatically these men pleaded for the formal expression by the Association of a protest against the present law. Neither their motives, nor the statistics they gave in wealth of detail, were to be questioned. What action the Association will take in this matter is not known at this writing, but, whatever it is, we trust it will be taken in the full understanding that it will be welcomed and weighed and respected.

#### THE VALUE OF EXAGGERATION.

Most ably has the subject of the doctor's fee been treated by Roberts (*Philadelphia Med. Journal*, May 11, 1901) and most thoroughly has he exposed many of the unethical and dishonest

method by which it is increased. He scathingly denounces the system adopted by some consultants of offering commissions for patients and dividing fees received from them with the sender. The furnishing of testimonials to manufacturers of drugs for pecuniary or other recompense is justly condemned. The overcharging of the wealthy on the ground that they can afford to pay and of the estates of deceased patients, because the dead cannot complain, comes in for a share of denunciation, while the surgeon who will wait with the patient anesthetized and upon the table until his fee is paid is given the notoriety which he deserves.

The subject is decidedly unpleasant. Far more agreeable is it to discuss the effects of the abuse of alcohol by others, and to point out the resemblance between the so-called Christian Scientist and the guinea-pig on the ground that the latter is not a pig and that it did not come from Guinea. It is hard for a member of that profession which is composed of men whose relations to others most demand justice and a high moral sense to acknowledge the shortcomings of the fraternity. The family skeleton in the closet is not a congenial companion and the one exposed to view by Roberts is not the only one which the medical profession possesses. Advertising is one which has been given considerable notoriety. But what of exaggeration for the sake of impressing an actual or prospective patient? It is certainly one of the most common and most successful methods of enlarging a practice, but he must be careful indeed who escapes detection by others of the profession. We do not refer to self-glorification at society meetings, references to the extent of one's practice, or to others as the younger men; not to the publication of articles describing unique methods of palpating the impossible, of performing a whole series of operations through a microscopic incision of stated dimensions; not to seeking notoriety by receptions given to persons of note, or by newspaper interviews in which the speaker is more emphasized than the subject. These are merely phases of the advertising skeleton, showing various degrees of taste.

The form of exaggeration which is an indication not merely of lack of taste, but of dishonesty, appears in many shades. One of its best known examples is that of the physician who is invariably called just in time to prevent a threatened pneumonia or to save the patient's life; the man who diagnoses every case of bronchitis as pneu-

monia and claims that he has never had a death from the latter disease. Closely allied is the surgeon who with equal frequency dwells upon the seriousness of every case and every operation, however trivial, and lives upon the reputation acquired by the brilliant results he attains in spite of his dark prognoses. He is usually not one who is diffident in regard to mentioning such results or the number of his operations. The patient is usually pleased by the idea that he is a most unusual or serious case and is the last to suspect exaggeration. A well-known surgeon called to treat a case, apparently a limited cellulitis of the ankle, pronounces it "blood poisoning" and evacuates a small amount of pus. At a second visit a similar spot appears upon the anterior aspect of the ankle and is also relieved by a slight incision. The patient is surprised that he feels so well with so serious a difficulty, but is assured that it is nevertheless an ominous malady. After three weeks of treatment he is cured; he then publishes to his friends, lay and medical, the wonders of his case. His professional friends say nothing, but has their opinion of the well-known surgeon been improved, and are they the more likely to call him in consultation? Again a patient with chronic appendicitis, recovering from an exacerbation, is advised to wait until the interval and then be operated upon by his own surgeon in Boston. A surgeon who is as well known as he can make himself is called as consultant. Without a word to the attending physician he informs the patient and his family that his condition is serious and immediate operation is necessary. He is removed to the hospital where the surgeon operates, is kept in bed for twelve days and then operated upon after the attack has subsided. Incidentally suppuration of a clean case occurs, but this point is not exaggerated and is referred to as a slight oozing from the abdominal fat. Will he be called in consultation by those who know his name?

And concerning those whose statistics are manipulated; if such liberties with strict truth are not evident upon the face of their articles there are almost invariably enough witnesses to compare the published accounts with what they have seen. And of what advantage is it to minimize the dangers of a procedure which one advocates? Suppose that an operator publishes a long series of operations under lumbar anesthesia and claims that the inconveniences are insignificant, the headache following so slight as to be negligible. Investigation will undoubtedly show

that morphine has failed to relieve the suffering which the injection of cocaine caused, and the reporter's reputation has suffered by inaccuracy.

The tendency to specialize has become so strong that it has been said that diseases of the umbilicus is the only field that has not been filled. Convalescence is evidently the specialty of some physicians, for it is well known that there are those whose daily visits rarely terminate until the patient, in self-defense, is obliged to assume the responsibility of deciding that a cure has been accomplished for some time.

Where competition is so keen as in New York and exaggeration is so common a bait for the patient, the fact that such procedures are not ethical will have little weight with those most concerned. But after all honesty is the best policy. Murder will out, and eventually many a dishonest act will work untold harm to its performer.

## ECHOES AND NEWS.

### NEW YORK.

**Inquiry Concerning Tuberculosis in New York State.**—Local health officers throughout the State have been requested by the State Department of Health to furnish a list of the number of persons afflicted with consumption in their respective localities. The present immediate purpose is not to require or obtain a personal registry of these cases, or to institute a system of sanitary inspection or isolation of consumptives, but to obtain with such accuracy as it is possible to do, a record of the number of persons in each municipality who, at this time are subjects of this disease; to learn the locality of the disease, its distribution and surroundings. This accumulation of data will be fundamental to more exact plans for control of the disease.

**New Buildings for Rochester Hospital.**—The State Commission in Lunacy has approved of plans for a new group of buildings at the Rochester State Hospital to cost about \$230,000. This will afford additional accommodations for 500 patients.

**New Appointments Medical School Columbia University.**—Drs. Charles H. Peck, Warren S. Bickham, and Alfred S. Taylor were appointed assistants in surgery. The winners of the Jacob Harsen Prize this year are Charles Smith, Philip Van Ingen, and William Darach.

**A New Journal.**—A copy of a new journal devoted to the interests of psychiatry has just arrived. It is called "The Journal of Mental Pathology," and is edited by Dr. Louise G. Robinovitch. On the staff of contributors



we notice some of the most distinguished men of medical science.

**Gift to Medicine.**—Mr. John D. Rockefeller has given \$200,000 to found an institute for medical research, with its headquarters in New York City. It is generally believed that this will lead to a still more adequate endowment when the time comes to erect a permanent home for the work. The direction of the new institution has been entrusted to the following distinguished gentlemen: Dr. William H. Welch, of Johns Hopkins University; Dr. T. Mitchell Prudden, of Columbia College; Dr. L. E. Holt, of the same institution; Dr. C. A. Herter, of New York University and Bellevue Medical College; Dr. Theobald Smith, of Harvard; Dr. H. M. Biggs, of the New York City Board of Health, and Dr. Simon Flexner, of the University of Pennsylvania.

**New Buildings for Loomis Sanitarium.**—A new chapel and buildings at the Loomis Sanitarium in Liberty, N. Y., were dedicated last week. The chapel is the gift of Mrs. Loomis, in memory of her husband, Dr. Alfred Lee Loomis, after whom the sanitarium is named.

**Health Authorities After Unclean Milkmen.**—The health authorities of Flushing, L. I., are making a crusade against milkmen who are suspected of violating the sanitary laws. Thirty-two cases of alleged violations recently came up in the local court. It is alleged by the authorities that the cans used by these men were found in a dangerously unclean condition.

**Smallpox in New York City.**—Cases of smallpox continue to be reported to the Board of Health. Seventeen deaths occurred from the disease last week. Incoming vessels, especially those from Naples and other Italian ports, are being held in quarantine for precautionary reasons.

**Home for Convalescent Patients.**—On May 27th St. Eleanor's Home for Convalescent Patients, which is situated on a high hill between Scarsdale and Tuckahoe in Westchester County, was dedicated by Archbishop Corrigan. The home will be open to convalescent patients from the hospitals of New York, who can remain there in charge of doctors and nurses and enjoy the country air until they are cured.

#### CHICAGO.

**Resignation of Dr. Futterer.**—Dr. Gustav Futterer, who for two years has been Professor of Pathology, at the Northwestern University Medical School, has resigned and his resignation has been accepted by the Trustees. As the school closes this week for the summer vacation, no immediate action will be taken in the matter of selecting a successor.

**Commencement Exercises.**—These exercises were held by the College of Physicians and Surgeons on May 29th. The graduates num-

bered 160. The Doctorate Address was delivered by Dr. Joseph M. Matthews, of Louisville, Kentucky. At the banquet of the Alumni Association of the College in the evening, Dr. Wm. Allen Pusey acted as toastmaster. President Draper, of the University of Illinois, responded to the toast "The University." The Rev. W. A. Burch made some remarks on "Physicians, by a Clergyman." Dr. Harold N. Moyer, of Rush Medical College, responded to the toast, "Our Friend, the Enemy." He commented on the equipment of Rush Medical College, as well as that of the College of Physicians and Surgeons, saying that both were incomplete. Dr. Alexander Hugh Ferguson spoke on "Failure and Success in Surgery."

**Election of Dr. Fenger.**—At the recent meeting of the Military Surgeons, held at St. Paul, Minn., Dr. Christian Fenger was elected honorary member of the Association.

**Appointment of Dr. Dudley.**—Dr. E. C. Dudley has been appointed a member of the Chicago Board of Education.

**Election of Dr. Beck.**—Dr. Joseph C. Beck has been elected Professor of Diseases of the Ear, Nose and Throat, in the Chicago Eye, Ear, Nose and Throat College.

**Appointments of Drs. Dickerman and Beard.**—Drs. Charles H. Beard and Edward T. Dickerman have been appointed on the staff of the Illinois Charitable Eye and Ear Infirmary.

**Donation by Marshall Field.**—Marshall Field has given the Chicago Home for Incurables ten lots adjoining the ground now occupied by the home. This land is valued at between \$40,000 and \$50,000.

**American Gynecological Society.**—This Society has just closed its twenty-sixth annual meeting, it being one of the most interesting in its history. The papers were of a high scientific order and the discussions spirited. A very full report of the proceedings of this meeting will appear in a future issue of the MEDICAL NEWS.

**Smallpox Situation.**—The thing most dreaded by the Department of Health is a change in the type of the smallpox. If this should occur, serious results are inevitable. The disease has been so mild that the contagion must be spread to an unknown extent from cases that have not come under observation. No person who is not positive as to vaccinal protection can afford to postpone vaccination before the weather gets too hot for the operation, and before the disease changes to a malignant character.

**Hospital Gift Refused.**—It is said that the offer of two Swedish-Americans in San Francisco to give \$25,000 each for the erection of a hospital in Lakeview, or other suitable location in Chicago, has been refused by the

Swedish Evangelical Mission Board unless the hospital is established in Bowmanville.

#### GENERAL.

**Leprosy in the United States.**—According to scientific investigations directed from Washington for several months, there are at least 275 cases of leprosy in the United States. That number have been reported, but it is thought probable that the real number is nearer a thousand. Seventy-four of the known cases are in New Orleans, chiefly among the Italian population. There are twenty-three in Minnesota, mostly among Scandinavians in the rural settlements. There are fifteen cases in North Dakota, and two in South Dakota, among the same people. So far as has been ascertained, there are none in Michigan or in Indiana; Chicago has five cases, New York six, Boston none. It is the intention of those who are compiling the figures to make a report to Congress, including such recommendations as may seem warranted. One recommendation will be for the erection of two large Government hospitals for lepers, one in the South and the other in the North. Eminent physicians have at different times been before committees of Congress in the interest of the erection of leper hospitals, but nothing came of these visits, the Government having no reliable data covering the prevalence of the disease.

**American Laryngological Association.**—The following officers for the next year were chosen: President, J. W. Farlow, of Boston; first vice-president, J. W. Gleitsman, of New York; second vice-president, D. Braden Kyle, of Philadelphia; secretary and treasurer, James E. Newcomb, of New York City; librarian, Joseph H. Bryan, of Washington; member of council, Henry L. Swain, of New Haven. Papers were read by Dr. Gleitsman, Dr. T. R. French, of Brooklyn; Dr. F. H. Bosworth, of New York; J. H. Goodale, of Boston; C. H. Knight, of New York; Carl Seiler, of Philadelphia; W. K. Simpson, of New York; Dr. A. W. Watson, of Philadelphia; Dr. Farlow and Dr. Wyatt Wingrave, of New York. It was voted to hold the next annual meeting in Boston about June 1, 1902.

**The Military Surgeons' Convention.**—The first session of this year's convention was held May 30th, at St. Paul, Minnesota. The convention was called to order by Brig. Gen. John F. Fulton of that city. Governor Van Sant, Mayor Smith, and Judge E. A. Jaggard delivered addresses of welcome. Dr. A. J. Stone, the President, delivered the annual address.

**Increase in Vivisection.**—The recent issue of a Parliamentary paper containing accounts of a number of experiments performed on living animals during the year 1900, under licenses, has raised the usual outcry from the anti-vivisectionists, who point to "thousands of tortured innocent dumb brutes," etc., but the

report of the inspector under the Cruelty to Animals Act shows there is no ground for this complaint. The total number of licenses was 247, of which sixty-three did not perform experiments. The licenses were recommended by men of the highest scientific standing. The total experiments were 10,830, an increase of 2,370 over 1899. The appearance of the bubonic plague is responsible for part of this increase. George D. Thane, the inspector under the Cruelty to Animals Act, says: "It is of the greatest importance that this disease should be recognized at the earliest possible moment. This can only be done with certainty with the aid of inoculations into animals. Two new licenses, which were granted in 1900, expressly allow necessary experiments in localities where infection is apprehended."

**No "Mental Therapeutics" in North Carolina.**—The Secretary of State of North Carolina has refused to charter a new College of Science and Healing—the first institution of the kind proposed in this State. In taking this position he is fortified by an opinion of the Attorney-General of North Carolina, and the terms of the law governing the issuing of licenses to practise medicine in this State.

**New President of Johns Hopkins University.**—Prof. Ira D. Remsen, who since the founding of the Johns Hopkins University in 1876 has occupied the chair of chemistry, will be the future President of this institution to succeed Dr. Daniel C. Gilman, resigned. This decision was reached by the trustees at a meeting held June 3d. Dr. Gilman's resignation will take effect this month. Prof. Remsen will enter upon his duties as President at the beginning of the academic year in September.

**Mississippi Not Polluted.**—In an exhaustive report filed with the State Board of Health last week Dr. John Long, professor of chemistry in Northwestern University, special investigator for the State, asserts that for a distance of forty-two miles north of St. Louis there is absolutely no trace of sewage in the waters of the Mississippi. Researches and chemical tests of waters of Illinois and Mississippi Rivers cover a period extending back before the drainage canal was opened, and show that the effect of the opening of the canal was harmless.

**Cleveland's Smallpox Cases.**—According to a dispatch from Toledo a sensation has been sprung in Ohio over a public statement by the Health Commissioner of Buffalo. He says there was recently a secret meeting of the health authorities of five of the chief cities on the lakes, generally understood to be Toledo, Chicago, Toronto, Buffalo and Detroit, at Cleveland, when a demand for better smallpox sanitation in Cleveland was made. Cleveland has had this year nearly one thousand cases and Buffalo, in view of her big show, is alarmed. It is suggested that a strict quarantine be demanded at Cleveland and that for



a time no trains be permitted to stop and land or take on passengers there and that the same precautions be arranged with regard to the steamboats. The authorities of Cleveland are said to be very much wrought up over the possibility of a general demand for such action.

**Plague Case Near London.**—At Willesden, a suburb of London, a man supposed to be suffering from the lightest form of bubonic plague was discovered last week. Persons with whom he had come in contact were detained, but have now been released. The patient himself is now under observation.

**Roentgen Society of the United States.**—The preliminary announcement of the Roentgen Society has been sent out. The following gentlemen are the present officers: President, Dr. Heber Robarts, of St. Louis, Mo.; First Vice-President, Dr. G. P. Girdwood, of Montreal, Canada; Second Vice-President, Dr. H. P. Bender, of Brooklyn, N. Y.; Secretary, Dr. J. Rudis-Jicinsky, of Cedar Rapids, Iowa. The second regular meeting of the Society will be held in Buffalo, N. Y., September 10-11, 1901.

**Plague Spreading in the East.**—In spite of the fact that the plague is spreading in the Punjab, where it has already invaded several hundred villages, the repressive measures have so dangerously irritated the natives that the Government has been obliged to order a wholesale relaxation of the plague regulations. Sir Henry A. Blake, Governor of Hong-kong, reports to the Colonial Office that during the week ending May 25th there occurred in Hong-kong 187 deaths from the bubonic plague.

**Yellow Fever and the Mosquito.**—Dr. Finlay, son of the originator of the mosquito theory of yellow-fever propagation, arrived in this country this week from Havana. Dr. Finlay, speaking of his father's work, is reported to have said: "My father, when he discovered that mosquitoes spread yellow fever, caught one of the pests, and, after starving the insect for two days, allowed it to bite himself. This test, however, was not a good one, as he is an immune, and then the same test was applied to a subject who was susceptible to the disease. The latter contracted the fever in this way, and then hundreds of similar experiments followed, and all the subjects developed yellow fever. Dr. Lazier, one of the Yellow-Fever Commission, who died under the experiment, allowed himself to be bitten by five or six mosquitoes, and in that way got an unusually heavy inoculation. As the experiments proceed, it is believed that in time a virus obtained from either a patient or a *Culex* will be procured, which, when modified, can be used as successfully as is bovine virus for smallpox."

**Obituary.**—Dr. John E. Comfort, one of the best-known physicians in the Borough of the

Bronx, and a member of the New York County Medical Society, died at his residence on May 29th. He was born in St. Louis, Mo., October 6, 1837, graduated at the Albany Medical College in 1864, and entered the United States Army Jan. 19, 1865, as Assistant Surgeon of the Sixtieth New York State Volunteers. For more than thirty years he had a large practice in the upper wards of the city and served twelve years as Inspector on the Board of Health.

Dr. T. A. Bowling, of Hammondsville, Ky., was killed May 29th by an accident.

Dr. John A. Feeny, sanitary superintendent of the borough of Richmond and one of the leading physicians of Staten Island, died May 31st at his home on Beach Street, Stapleton, Staten Island. He had been seriously ill for three weeks with a complication of diseases. Dr. Feeny was born at Stapleton in September, 1845, and was the second son of Dr. Joseph Feeny. He was graduated from the medical department of the University of New York in 1866.

Dr. Seth B. Sprague died at his home in Jersey City, June 5th, from a complication of diseases. He was born at Dexter, Me., Jan. 12, 1840, and was graduated from Bowdoin College. He removed to Jersey City in 1890 and built up a large practice. His eldest son is Dr. Ezra K. Sprague of the United States Marine Hospital Service.

## CORRESPONDENCE.

### OLLIER MONUMENT FUND.

*To the Editor of the MEDICAL NEWS:*

Dear Doctor: Some time since you kindly published an appeal of a committee soliciting subscriptions for a monument to the late Prof. Ollier in Lyons. As Treasurer of the Committee, I beg that you will publish this letter in your journal in order to inform the profession that I have received the sum of \$649.00 from 103 subscribers. I have forwarded the same, less \$4.60 for postage, printing, etc., to Dr. G. Mondan, 27 rue Jarente, Lyons, France.

W. W. KEEN, *Chairman.*

1729 Chestnut St., Philadelphia, June 3, 1901.

### OUR LONDON LETTER.

[From Our Own Correspondent.]

LONDON, May 25, 1901.

AN UNEVENTFUL WEEK—ANTIVIVISECTIONISTS IN COUNCIL—THE TWO SECTS OF ANTIVIVISECTIONISM—MR. STEPHEN COLERIDGE AND MISS FRANCES POWER COBBE—THE "ABOLITIONIST"—THE VALUE OF LAWSON TAIT'S TESTIMONY—A STORY OF SIR WILLIAM GULL.

"All's well with the world," as Browning's passing Pippa sings—at any rate, with the medical world here for the moment. The Committee appointed to inquire into the affairs of the

National Hospital for the Paralyzed and Epileptic, where the medical staff and the lay governors are fighting for the crown, appears to be going about its business in a workmanlike manner; the Committee which has taken in hand the reconstruction of the British Medical Association is considering whether anything of a revolutionary character can be done in face of the fact that of a membership of nearly 20,000 scarcely 1,000 have been at the trouble to vote at all; the reformers of the medical service of the army have for the present ceased to trouble; and the organizers of the Tuberculosis Congress have after much bickering and intriguing practically come to an understanding.

The past week, therefore, as far as strictly medical affairs are concerned, has been uneventful. One has, therefore, to go outside the realm of medicine to find matter for a letter. But one has not to go very far afield, for the antivivisectionists lie just outside our frontier, and they have been gathering in force and like their friends, the dogs in the hymn, barking and biting as 'tis their nature to. Last week the National Antivivisection Society held its annual meeting, at which the proceedings as usual took the form of a debauch of emotional excitement over the supposed tortures inflicted on animals in biological laboratories. If one may judge from the character of the assembly the antiscientific movement finds no support either in the brain or the heart of the country, for as far as can be gathered it was attended by no one of any intellectual importance or whose name is known in association with philanthropic work. Our antivivisectionists are mostly of that curious type of humanity which finds its embodiment in the phrase of a distinguished American writer, in "long-haired men and short-haired women." One has only to see them to recognize the outward and visible signs of the crank. If Lombroso's view is right that there is a close affinity between neurosis and genius, there must be a vast number of latent Shakespeares and Goethes among the antivivisectionist fraternity.

There are two main sects among our vivisectionists which hate each other with an almost theological intensity. One of these is represented by the National Antivivisection Society aforesaid, the moving spirit of which is Mr. Stephen Coleridge; the other is the British Union for the Abolition of Vivisection, which derives its inspiration from Miss Frances Power Cobbe. Mr. Coleridge is a son of the late Lord Coleridge, Lord Chief Justice of England, in whom the antiscientific bias was very pronounced. Some revelations of his home life which were made in the law courts a good many years ago showed that however kind he may have been to animals, he was not always tender to his own flesh and blood. Edmund Yates (whom he put in prison and who may, therefore, have been a little prejudiced) never referred to him in the *London World* except as the "Roman Father." Neither the present Lord Coleridge, who practises at the bar, nor his brother Stephen, also a lawyer, is

particularly popular; they are warm champions of the rights of animals, but their manner does not give the impression of a burning love of their own species. And the virulence with which Mr. Stephen Coleridge denounces all who say a word in defence of vivisection, the subtle misrepresentation with which he seeks to damage all hospitals which have vivisection on their medical staff, and in particular the rancorous abuse which he loses no opportunity of flinging at that great benefactor of mankind, Lord Lister, would lead one to believe that he holds human suffering and human life cheap compared with even temporary inconvenience to an animal.

Vivisection in this country is already surrounded by so many restrictions that we are falling more and more behind the rest of the world in the matter of research. Licenses of a complex character have to be obtained from the Home Secretary and all laboratories are subject to Government inspection. The antivivisectionists say the inspection is a farce and hint that the Home Office is in collusion with the experimenters to conceal the horrors of the physiological torture chamber. But those who are acquainted with the facts know that the inspection is a serious business and that violation by a worker of the terms of his license would lead to its revocation; further, that any act of needless cruelty proved against him would bring him within the clutches of the law.

The antivivisectionists, however, will be satisfied with nothing less than the complete abolition of all experimentation on animals. It is on the question of the way to secure this result that they have fallen out among themselves. Mr. Stephen Coleridge is a political tactician and will take what he can get while reserving of doing like Oliver Twist and asking for more, when the time seems ripe for such a demand. Miss Frances Power Cobbe, however, insists on a policy of what Strafford in governing Ireland called "thorough." She will not tamper with the accursed thing, and if she could have her way would doubtless have all vivisectionists and their supporters burnt and their ashes scattered to the winds. Miss Cobbe's pen and tongue used to be ceaselessly active in the denunciation of biological research, and her language was like that of the invalid in one of Bret Harte's poems "painful and frequent and free." But some eight or nine years ago Mr. Victor Horsley took the field against her and proved himself a much superior master of vituperation. Thus beaten with her own weapon, Miss Cobbe retired into the shelter of the "silences" of which the world used to hear so much from Carlyle. But unchilled by the winter of advanced age the hatred of vivisection still rages in her breast, and disdaining compromise she insists on its absolute suppression. The British Union for the Abolition of Vivisection of which she is the prophetess has as its mouthpiece a journal entitled the *Abolitionist* which not long ago made the exhilarating discovery that vivisectionists torture the animals used for experiment for the same pur-



pose that "Jack the Ripper" mutilated his victims. Vivisection is in fact, according to this charitable theory, a peculiarly revolting form of Sodism.

Among the few medical authorities whom the antivivisectionists cite to give evidence in their favor is Lawson Tait. I see he is quoted by their brethren on your side of the water too. It may be well, therefore, to indicate the value that should be attached to his testimony in the matter. Lawson Tait was a daring surgeon and a brilliant operator within his own limited sphere of practice; but he was also a master of the art of *réclame*, and he knew well how to tickle the ears of the groundlings. Very likely his dislike of vivisection was sincere enough, but his conviction of its uselessness was doubtless greatly intensified by the fact that Spencer Wells had said that it was by experiments on animals that he had learned how to perform ovariectomy successfully. It was enough that Spencer Wells should say a thing for Tait to say the opposite. Moreover, to speak plainly, Tait had in him much of the bully and the coward. He was blustering in assertion, but often strangely backward in proof. At a Church Congress held at Folkestone some years ago, a debate on vivisection figured prominently on the program and Lawson Tait's name was "billed" for an address on the subject. When, however, it was announced that Victor Horsley was to be on the platform, Tait's controversial valor oozed like that of Bob Acres out of his finger ends, and he failed to put in an appearance. It was rather a habit of his to send a bold challenge—to a fight in the lists of the law courts or elsewhere—and when it was taken up by the threatened party, to find it convenient to subside. Lawson Tait had, as already said, his good points, but in regard to experiments on animals the value of his testimony may most politely be expressed in the language of the tailor who said Falstaff must procure him some better assurance than Bardolph; he liked not the security.

In a book recently published by Canon Fleming, a popular preacher in high favor with the Royal family, there is a story about the late Sir William Gull which is characteristic of that most diplomatic of physicians. Gull was with the present King, then Prince of Wales, during the attack of typhoid fever which nearly cut short his career thirty years ago. The Duke of Cambridge went to Sandringham, and was about to ask Sir William about the patient, when the physician began drawing on the back of a telegram. "What are you doing?" asked the Duke. "I am drawing a picture, Sir, and underneath I purpose writing, 'Never speak to the man at the wheel.'" Gull's tact gave him a great advantage over colleagues who knew just as much or more than he did. One of the best instances of this is the way in which he satisfied the inconvenient curiosity of the wife of a well-known financial leader in Israel. The millionaire was suffering from Bright's disease for which he had for some time been attended by the late Sir Richard

Quain. It was thought advisable that the anxious wife should not know the exact nature of her husband's disease, and she on her side made the lives of his physicians burdensome to them by her persistent cross-questioning. She suggested that Gull should be called in, but the doctors in possession did not relish the idea of having so powerful an auxiliary forced upon them. At last, however, they could no longer decently resist. Gull came and, as usual, saw and conquered—not the disease but the lady. After he had examined the patient the wife said to the great man that none of the others would tell her what was the matter with her husband, and she pretty plainly hinted that she did not believe they knew. She gave the oracle to understand that she looked to him for an answer. It might have been said of Gull, as it was of Lord Chancellor Thurlow, that no man could ever have been so wise as he looked; and in this critical situation he looked as wise as one of Minerva's owls. "Madam," he solemnly replied, "your husband is suffering from a cachexia!" "There" said the lady "I *knew* Sir William Gull would know." So the services of the other physicians were politely dispensed with and Gull was left master of the field. Quain, who, like the incredulous Scotchman of the legend, was something of a "leear himsel'," used to relate this story as showing Gull's superiority in the art.

#### TRANSACTIONS OF FOREIGN SOCIETIES.

##### German.

DILATATION OF THE ESOPHAGUS—MULTIPLE PERIOSTITIS — DIAPHRAGMATIC HERNIA — PULMONARY SYPHILIS—RADIOLOGY—GIANT-CELL DEGENERATION OF THE HEMOPOIETIC ORGANS—EPIDEMICS OF CEREBROSPINAL MENINGITIS—HYPERTROPHIC HEPATIC CIRRHOSIS.

STRAUSS, at the Nineteenth Congress for Internal Medicine, Berlin, 1901, showed an esophagus from a twenty-nine-year-old man presenting at the middle and lower thirds a curious idiopathic sacculated dilatation, which measured fifteen centimeters in its smallest and thirty centimeters in its largest dimension. So far as the pathogenesis of this condition is concerned he laid stress upon the important effect of arrest of post-fetal development, especially in the mucosa, and of various early lesions of the mucosa which might contribute to the onset of the enlargement. He then showed several instruments designed to diagnose such dilatations of the lumen of the viscus.

VON JAKSCH exhibited the bones from a case of multiple periostitis observed in a young girl and belonging very probably to the category of blood diseases, perhaps of the myelogenous leucemic type. In a few of the bones, especially the radius, the process healed during the course of the disease. Roentgen-ray photographs showed the generalized periosteal lesions. During the course of the disease the mononuclear neutrophile cells continued to increase in a regular

ratio, while the polynuclear proportionately decreased in number. The eosinophile leucocytes became more numerous just before death. A little later large nucleated red cells began to appear and then later polychromatic degenerated forms. At the autopsy the spleen was found to be enlarged and the bone-marrow in a few bones more or less atrophied.

STRUPPLER presented a young man who for six and a half years had had diaphragmatic hernia, following traumatism. The affection was diagnosed early, and had on one occasion been mistaken for pyopneumothorax, as is so common in such cases. The author then demonstrated the peculiar physical signs of the patient. Skiagraphs served to substantiate the signs. It was evident that the stomach, great omentum and some of the small intestines had come through the diaphragm into the left thorax and were occupying its central portion. The symptoms were more or less pain and distress on eating.

HAUSEMANN raised the question whether or not it is possible to diagnosticate syphilis of the lungs distinctly as such, as contradistinguished from tuberculosis and its cheesy deposits. Since Virchow first raised the point it has remained an unsettled question. The difficulty comes in when there is nothing characteristic especially about the lesion as seen on the autopsy-table. We have the hepatization. The microscopic appearance may be largely similar, but the absence of the bacilli in the sections and the failure of animal-inoculation will strongly suggest that syphilis is the underlying disease, especially if there are other signs of it in the viscera.

LEVY-DORN discussed the problems of Roentgenoscopic dermatography, stating that the error of all radioscopic pictures is that one cannot see just what is the condition and position of the organs at the time of the exposure. If the photographic plate is laid directly upon the skin this difficulty is at least in part overcome. For a long time he has endeavored to reduce this to practical and methodical solution. His early experiments were aimed to determine the depth from the skin in a vertical direction of deeply situated bodies, like the viscera and foreign substances. He finally demonstrated a new apparatus which in both the recumbent and the erect position of the patient permits of accurate estimate of the position of the viscera, such as the heart and diaphragm, by a simple parallel displacement.

MICHAELIS described a case of giant-cell degeneration throughout the blood-producing organs accompanied by a curious condition of the blood. The patient was a woman fifty years old who had gone through an attack of the grip a few months before, but had never fully regained her strength, because her appearance was always cachectic, although upon admission to the hospital she was not yet emaciated. Upon physical examination, the spleen was found to be very much enlarged, but the lymph-nodes throughout the body appeared to be normal. The blood examination showed a moderate increase in the

white blood-cells (1:220), the lymphocytes were very numerous (75:100), the neutrophilic myelocytes were also increased to 7:100, nucleated red cells were found at first but later apparently entirely disappeared. There was at no time any hemorrhagic diathesis. At the autopsy the spleen was found to be extremely soft, the lymph-nodes nowhere were swollen, the bone-marrow was red but not very soft, and the bones themselves were not altered. Microscopically the giant-cells of the bone-marrow were much increased in number and they were found invading the liver and the spleen. In each of these two organs were also found several small-cell infiltrations. Perhaps it was an example of some disease of the bone-marrow with augmentation of the giant-cells which escaped into the blood and invaded the other organs of the body. Certainly the woman had some form of leucemia.

JAEGER spoke of the spread of epidemic cerebrospinal meningitis. While earlier there are no reliable statistics concerning the contagiousness of this disease, the epidemic in the Thirteenth Imperial Wurtemberg Army Corps has furnished a good field for observation. In addition to the bacteriological features of lumbar puncture, which can now be observed in almost all cases, the results of modern statistics must not be forgotten. The results of statistics will be best when the various laws governing contagious diseases are brought into agreement. His own tables prepared from the German records point to rather a good outlook as to the absolute communicability of this disease. In certain parts of the world, especially in the densely populous sections of New York and Massachusetts, the disease in an epidemic type seems to be settled and almost endemic.

HIRSCHBERG spoke of the operative treatment of cirrhosis of the liver which has always been regarded as an incurable disease, especially in the hypertrophic forms. He submitted the history of one case, a man, fifty-one years of age, who had been suffering a long time from an actively progressive cirrhosis so that the liver had hugely increased in size. The theory of the disease which the author holds is that ordinary hypertrophy is not at the expense of the parenchymatous cells of the viscus until later in the disease. The fibrous tissue increase, however, is of such a character that the intravisceral gall-passages and their radicles become more and more obstructed, until finally a real retention of the bile is present with secondary cell-degeneration and jaundice. With such a standpoint for explaining the sequence of lesions and symptoms, it follows that any operation must seek to relieve this retention of the bile. In his patient he exposed the liver and made a long, deep cut in its surface and found that a copious evacuation of the bile took place for five days after the procedure and continued in slowly decreasing quantity for a month. Spontaneous cure of the fistula followed. One year after this treatment the man had gained twenty-five pounds and was in excellent condition.



## SOCIETY PROCEEDINGS.

## SECTION ON PRACTICE OF MEDICINE.

## AMERICAN MEDICAL ASSOCIATION.

*Fifty-Second Annual Meeting, Held at St. Paul, Minn., June 4-7, 1901.*

[Special Telegraphic Report.]

## GENERAL SESSION.

## FIRST DAY—JUNE 4TH.

AFTER the call to order the meeting was opened with prayer by Bishop H. B. Whipple of St. Paul, Minn. An address of welcome by Hon. R. A. Smith, Mayor of St. Paul, gave medical visitors the freedom of the city. The feature of the opening session was a magnificent address by the President, Dr. C. A. L. Reed of Cincinnati. (See page 885.)

Dr. Pennington of Chicago presented the portrait of Dr. N. S. Davis of Chicago one of the founders of the Association and a former president. At his suggestion a committee was appointed to obtain without cost to the Association the portraits of other ex-presidents.

Dr. George H. Simmons, the Secretary of the Association, reported the membership at 10,600, an increase of nearly 1,600 during the year, the largest increase in its history. Dr. L. D. Bulkley of New York reported for the Executive Committee that hereafter the number of papers to be read before Sections would be limited. The resolution proposed by him that the title of no paper would be announced if an abstract of it was not furnished by the writer was adopted.

For the Board of Trustees, Dr. Happel of Tennessee reported that the total receipts of the Treasurer of the Association for the year were \$131,787. There remains in the treasury \$31,864 and besides \$10,000 has been spent for machinery for the *Journal* of the Association. The plant of the *Journal* and money on hand is equal to more than \$50,000. So far this year advertisements in the *Journal* have paid an average of \$1,000 per week, although a new policy of limiting advertisements strictly to such drugs as are not advertised in public newspapers has been adopted. Dr. Happel moved that the officers of Sections should be made responsible for the publication of papers from their Sections. They should be given power to reject papers deemed unworthy of publication and also to compress papers that are too lengthy. This resolution was adopted unanimously.

H. I. E. Johnson of Washington for the Committee on Legislation reported that the Senate bill on Antivivisection had been effectually killed during the last meeting of Congress and its resurrection now seemed hopeless. He suggested the adoption of a motion as to standing committees in each State to influence members of the Legislature.

## FIRST DAY—JUNE 4TH.

**Advances in Medicine.**—The session was opened by Dr. Anders of Philadelphia, Chairman of the Section, who delivered the annual address. The advances in medicine in the present century, he said, had come mainly in diagnosis. They had been great and accomplished much good for medicine. Of late years there had been more interest than before displayed in the development of therapeutics. This had in some instances degenerated into a too great leaning towards new remedies. Novelty has often been the only reason for prominence obtained by certain drugs. Of this the profession has reached a realization. Members of the profession who introduce new drugs after only very limited experience with them no longer enjoy the prestige they had. This is as it should be.

**Recent Therapeutics.**—The most encouraging thing about recent therapeutics is the marked tendency to revert to common-sense methods in the employment of physical and physiological means for the treatment of diseases. Recently renewed interest has been awakened in dietetics and hydrotherapy. Dietetics especially constitutes a most promising field. The more the new century devotes itself to it, the surer will be our absolute progress in the cure of disease. This must after all be the main object of the discussions on practice of medicine, although the tendency of late has been to relegate matters of therapeutics to the special Section on that subject. This is unfortunate and must be remedied by the greater attention of the medical section to practical subjects.

**Appendicitis.**—Dr. John B. Deaver of Philadelphia said that appendicitis is an eminently proper subject to be discussed before the Medical Section since most frequently appendicitis came first for treatment to the medical practitioner. The appendix is more liable to destructive inflammation because it is an organ now in course of disappearance; it has a small canal in a long structure and it is intimately in contact with large accumulations of microbes in the intestines. The bacillus coli communis, an almost constant inhabitant of the intestinal tract, is especially liable to set up inflammation of the appendix if for any cause it becomes imprisoned in that structure. As soon as a condition develops in any hollow viscus in which evacuation becomes impossible, operation is absolutely indicated. This is true of the bladder, the bowels, the stomach. As soon as this condition is established these cases become surgical in character and pass out of the physician's hands. This is just what occurs in appendicitis in all its forms.

**Types of Appendicitis.**—The disease may be acute or chronic. Acute appendicitis may be

catarrhal, interstitial, ulcerative or gangrenous. Chronic appendicitis may be catarrhal, interstitial, or, finally, obliterative. It is this last type that has constituted the supposed justification for the medical treatment of appendicitis. It is argued that Nature often obliterates the appendix and so brings about a spontaneous cure in many cases of appendicitis. This argument is founded on an illusion. The cases of obliterative appendicitis are extremely rare. In thousands of cases in his personal experience Dr. Deaver has seen obliteration of the appendix occur only in less than a dozen cases. To wait and hope for this one chance in hundreds is to abuse the patient's confidence and waste precious life-saving opportunities.

**Nature's Protective Efforts.**—In these cases such are often sadly misdirected. She means well but accomplishes very little. Even when she walls off infective material, it is but temporizing with a deadly enemy. Abscess formation does not ensure the patient from sudden and unexpected peritonitis on very little provocation. When rupture of the abscess into a hollow viscus like the bladder takes place the patient's condition is only temporarily improved and only very slight protection against fatal peritonitis is afforded.

**Symptomatology.**—In all abdominal affections the first requisite for safe diagnosis is to exclude appendicitis. This is a precious rule for practical life. All colicky pains in the abdomen are to be suspected of connection with the appendix. The pain need not be localized at McBurney's point. Practitioners deceive themselves and incur great risks for their patients by placing any dependence on the belief that pain at McBurney's point is necessarily present in appendicitis. If the type of the appendix is in the pelvis the pain will often be referred to the vesical region and may be distinctly in the median line. In certain of these cases reflexes are sent down along the spermatic plexus of nerves and there may be retraction of the testicle precisely as in stone in the kidney. This makes differential diagnosis extremely difficult. Operation may have to be done on suspicion, but will be justified if there is any localized tenderness.

**Abdominal Tenderness.**—This is an extremely important symptom. If there is an area in the abdomen tender to the touch it indicates localized inflammatory disturbance. If the tenderness is exquisite and limited to a small area, it means pus formation. This indicates operation. To discover this acute tenderness palpation must be carefully performed beginning at a point well distant from the suspected site of inflammation. To palpate roughly is not only to obscure the condition, but it may do positive harm by rupturing fine adhesions.

**No Symptoms Pathognomonic.**—Much study had been given to the question of the

time to operate. The temperature was said to provide valuable indications, but it is untrustworthy. Pus may develop rapidly in a walled-off space without temperature. The pulse is no surer in its indications. Blood-counts give information, but do not decide the question. In fulminant cases leucocytosis fails to develop. In many cases the leucocytosis will not be pronounced, yet surgical experience shows the operation needed.

**Differential Diagnosis.**—As to the kidney-stone and gall-stone, the question of differential diagnosis becomes most difficult. In dubious cases, operate. There is much less danger in exploratory operation than in delay. In women extra-uterine pregnancy and ovarian disease are difficult of differentiation, but as they need operation quite as much as appendicitis the surgeon has less disquietude. Typhoid fever in its incipient stages often simulates appendicitis so closely as to make differentiation practically impossible. The hope is in the history of possible exposure and the prevalence of typhoid at the time the symptoms declare themselves.

**Cured Cases.**—These are illusory. There is always a focus left in which the tissues are less resistant. Subsequent attacks are almost sure to occur. No one, no matter what his experience, can foretell the course of appendicitis or how severe the next attack will be. To permit pus formation without surgical intervention is almost a crime. The ordinary medical treatment for appendicitis is little better than high-grade Christian Science. The interval is an indication for operation. Early operation is life-saving. Much more harm is done by delay than by operation.

**Value of Leucocytosis.**—Dr. De Lancey Rochester of Buffalo said that when leucocytosis occurs there is surely pus formation. When there is hesitancy as to the necessity for operation, this gives a decisive indication. In a recent case where parents refused to permit operation, the assurance of its absolute need was confidently given after the leucocytosis had been shown to exist. A number of blood-counts were made and always, when the temperature was high, the leucocyte count was also high. The toxins whose absorption caused the fever evidently influenced the number of white cells. Appendicitis may be recovered from even when very severe and may never recur. Every physician has had these cases. In Dr. Rochester's experience a man of thirty-five refused absolutely to be operated on. He recovered after a severe attack with a large easily palpable appendix. Nearly ten years have passed, yet he has had no recurrence.

**Appendicitis a Surgical Affection.**—Dr. Kelly of Philadelphia said that appendicitis is never a medical affection. In the physician's hands the patient gets well only by happy chance. There is no guarantee against recurrence. Modern progress points to surgery



dominating this field with ultimate benefit to all our patients.

**Course of Appendicitis.**—Dr. Smyth of Memphis said that no one can foretell the course of an appendicitis. It does not depend on any factors that can be determined beforehand. It is not in the least dependent on medical treatment; in fact, it is not influenced in the slightest by the medical plan of campaign, whether it be the opium that masks the symptoms or the salines that may increase them. The only assurance for the practitioner is an aseptic scalpel.

**Appendicitis, Theory and Practice.**—In theory Dr. Deaver's advice to operate for every pain in the belly may be a good one, but for a patient to submit to it, he must have the stoical heroism of an old Roman and the faith of a Daniel. We must consider not what is ideally best, but what our patients will accept as for the best. There seems no doubt that many cases of appendicitis will recover under simple medical treatment. This does not mean any special drugs, but absolute rest, absolute abstinence from food and the free use of salines, with an ice-bag locally. Under this plan of treatment there seems no reason why most cases of appendicitis do not get well without operation. Even surgeons admit that eighty per cent. of the cases of appendicitis do not need operation. It must be remembered that all scalpels are not aseptic and that many cases are lost as the result, perhaps, of needless operation. The medical man should if possible always have a surgeon in consultation, but must be conservative in agreeing to an operation.

**Prophylaxis of Appendicitis.**—Dr. Boardman Reed of Philadelphia said that not only is there danger from an operation for appendicitis at the time of its actual performance, but there are often unpleasant complications and unfortunate sequelæ. The duty of the medical man is to prevent the occurrence of acute attacks of appendicitis. Often for a long time before its actual outbreak there are symptoms that point to the gathering storm. There are often months, sometimes years, of impaired health. There is constipation with intervals of diarrhea. There is often persistent and increasing anemia. In the urine there are the signs of disturbed intestinal digestion. Indican may be found, the sulphates are in excess and the acidity is increased. There is often obstinate gastric disturbance and especially increased acidity of the stomach. This gives rise to catarrhal irritation of the intestines which also involves the appendix. If these symptoms are relieved before they terminate in pathological changes the appendicitis may be prevented. This is the problem the medical man must set himself to solve.

**Rigidity as a Symptom.**—Dr. I. N. Love of New York said that rigidity of the abdominal muscles on the right side is often the first

symptom of appendicitis and it is always a most valuable sign. Nature thus splints the intestines and indicates the plan of treatment she wishes followed. Rigidity if looked for may lead to the very early discovery of appendicitis, when often all that is needed is absolute rest in bed and fasting to make the patient as well as ever.

**Fulminant Appendicitis.**—Dr. Lily of Memphis reported a case of fulminant appendicitis in his own son. The boy, a strong athlete of twenty-one, took luncheon in good health at twelve o'clock, and an hour later was almost in collapse. A hernial tumor developed on the right side. This subsided while on the way to the hospital. Operation was postponed until the following morning when five inches of the ascending colon were found to be gangrenous and three inches of the large intestine so congested as to require removal; in addition to this five inches of the ileum were gangrenous. In all thirteen inches of intestine were removed and the patient recovered. The case illustrates how serious the condition of the appendix itself and neighboring structures may become within a few hours after the beginning of the attack. No confidence can be placed in seeming remissions. They often mean only that the disease is taking a fresh start.

**Change of Opinions.**—Dr. Deaver said in closing the discussion that the medical opinion with regard to appendicitis is gradually changing fortunately for the better. Five years ago the present discussion could scarcely have ended so favorably for the surgeon. True conservatism in the case of appendicitis the medical world has come to realize is early surgery; many lives will thus be saved.

**Phases of Malaria.**—Dr. J. B. McElroy, of Stovall, Miss., described some anomalous types of malaria. Comatose conditions in other countries develop only in malaria of the estivo-autumnal type. In the United States, however, some few cases of real malaria coma develop from the spring tertian and quartan types of malaria. The perniciousness of malaria is a feature of the estivo-autumnal type, because the parasite of this form of the disease develops very abundantly and affects many red cells. Their destruction leads to clogging of the capillaries and consequent disturbance of all function.

**Malarial Gangrene.**—A certain number of cases have been reported in which gangrene of the extremities occurs. These cases are sometimes symmetrical, so that there is question of Raynaud's disease. Osler has reported some of these types. In one patient reported by Dr. McElroy, gangrenous spots occurred over the knee-cap and the anterior tibial surface. The patient in his delirium left his bed to sit near the fire, but he had not touched the fire itself. In another patient, a child, the foot and leg became cold below the knee and

then dry gangrene set in. The line of demarcation began to form. During two weeks the patient was not seen and spontaneous amputation had taken place.

**Malarial Hemoglobinuria.**—Hemoglobinuria occurring in the course of malaria is practically always in Dr. McElroy's experience due to the malarial intoxication. The British Royal Commission of Investigation found 90 per cent. of black-water fever to be malarial in origin. In these cases the malarial parasites are not found in the peripheral circulation. Dr. McElroy found them in only two out of nine cases. There is no true leucocytosis in malaria. There is sometimes an apparent increase of white cells, but it is that the large mononuclear leucocytes are increased at the expense of the other forms. In malarial hemoglobinuria this is the form of leucocytosis that occurs. This confirms the suspicion of its malarial origin.

**Negro Immunity to Malaria.**—Dr. McElroy thinks there is no foundation for the tradition that negroes are comparatively immune to malaria. In the whites on a plantation in Dr. McElroy's neighborhood about 53 per cent. are malarial, among the blacks over 60 per cent. The negro mortality from the disease is over 30 per cent., that of the whites under 25 per cent.

**Negroes Relatively Immune.**—Dr. Wm. Britt Burns in the discussion said that the blacks are relatively immune. They take the disease, though much more exposed than the whites, in milder form. They respond better to treatment. Whites practically never recover from malarial coma. It is not rare to see a negro recover. Children of the whites are in serious danger if they have more than three chills. Black children stand many and yet remain comparatively strong in spite of the most unhygienic surroundings.

#### SECTION ON SURGERY AND ANATOMY.

##### FIRST DAY—JUNE 4TH.

**Medical Treatment of Appendicitis.**—Dr. A. J. Ochsner of Chicago dwelt chiefly with the new and what might be called quasi-medical treatment of appendicitis. Its exhibition deals chiefly with the prevention of diffuse general peritonitis which is so often a fatal accompaniment of this disease. Except toward the median line, where the small gut alone safeguards the appendix, very efficient protection is afforded this organ in all directions. The omentum, which normally and invariably in pathological conditions spreads its protecting mantle well over the appendix, affords not only a certain amount of mechanical protection and support, but by its vast blood-supply aids materially in draining away and destroying the exciting factors of the inflammation. Rest is here as emphatically indicated as in

inflamed areas elsewhere. The tense board-like abdominal walls the spasticity of the body on the affected side; the absence of peristalsis, all point tentatively to this great truth. Consequently it seems but rational that any treatment which can be inaugurated to give help and support to these splints of Nature or which, at least, shall in no way interfere with them, must be a rational and a safe one. It is summed up simply as follows: (1) No particle of food shall pass the mouth after the inception of the disease; (2) under no conditions shall cathartics of any character be administered; (3) gastric lavage repeated as often as may be necessary to abrogate meteorism and pain shall be freely used. No matter what may be the form of the disease, this treatment seems invariably beneficial, but more particularly in the fulminating and gangrenous forms in cases which have been aptly described as too late for early operation and too early for late, are the beneficent effects of this treatment manifested. Ninety per cent. of these cases are converted into the chronic type, practically all of which terminate in recovery. Of five hundred and sixty-five cases operated in the last four years, Dr. Ochsner is able to show the flatteringly low percentage of  $3\frac{1}{2}$  per cent. mortality. This, too, in a series of cases embracing every possible form of appendicitis. He drew the following conclusions: (1) The peristaltic movements of the small gut are the chief factors in distributing appendicular infections; (2) rectal enemas of any predigested food, not more than four ounces, should be given every four hours; (3) this treatment, if instituted at the onset of symptoms, will convert every fulminating case into one of a chronic form. (4) the laity should be instructed to cease giving food and salts in all cases of intra-abdominal distress.

**Surgery of the Spinal Cord.**—Dr. Andrew J. McCosh of New York said that the general trend of modern surgery gave more and more support to the prophetic sayings of Sir Astley Cooper, to wit: That in all cases where the worst was to be looked for in the event of pursuing a palliative course, the chances of an operation were emphatically indicated. In the light of our modern surgical technic there is no type of operation which more strongly emphasizes the truth of this saying. Operation should be undertaken the very moment a diagnosis is made and in every case where a diagnosis is impossible exploratory incision is called for. Unhappily, as yet the results obtained in surgical treatment of fractured vertebrae are in no way comparable to the brilliant productions of cerebral surgery. Although physiologists maintain that a re-establishment of function after severance of the cord is impossible, Dr. McCosh believes that there is yet ground to hope that under certain conditions this happy termination may be looked for. It is much to be deplored that a



custom has sprung into being which classes all cases presenting symptoms of the tumor of the cord as syphilitic. Despite plausible histories to the contrary, these unfortunates are put on prolonged antisyphilitic treatment, which is usually continued until pressure necrosis has hopelessly disintegrated the cord. There are two types of operative technic. In the first, three spinous processes and their laminae are divulsed with the rongeur. In the second, a corresponding amount of bony tissue is raised by the flap-method, to be subsequently replaced. This possesses but little merit, is occasionally unhappy in its results and is difficult of execution. The skin incision should be made as high as the lesion will permit in order that trophic changes over the injured cord may be avoided. He feels that particularly in cases of tumor early operation is indicated, that the greater the speed of operating, the better, and that at least three processes should be removed. Spinal supports he considers unnecessary.

**Spina Bifida.**—Dr. Paul F. Eve of Nashville dwelt on the characteristics of the tumor which not only permit the establishment of positive diagnosis, but which enable one with reasonable security to establish a correct prognosis. Some of these are translucency, elasticity and reducibility, with bulging of the fontanelles. Of particular import is the character of the pedicle. Because of the fatality surrounding this class of congenital malformation, it seems axiomatic that almost any radical measure presents even a shade of hope of complete restoration is justifiable. The day has passed for pressure and for the varied forms of astringent injection. Save in those cases where the breadth and delicacy of the pedical contraindicate, operation of a plastic type seems surely advisable. Particularly is this true where the tumor is increasing rapidly in size and the age of the patient has passed the third month.

**Methodical Exploration of the Brain for Fluid.**—Dr. Christian Fenger of Chicago spoke only of subcortical collections of pus. The three factors chiefly to be considered in this exploration are the type of instrument to be used, the position of the trephine areas and the extent and direction of the exploration. He gives preference to a blunt aspirating needle, although Von Bergmann advises the simple use of a knife which shall penetrate not more than three to four centimeters. In order most thoroughly to search for the offending material, he takes two trephine areas over each hemisphere, one anterior, the other well posterior. In each of these he passes the aspirator in every direction, and invariably taps the lateral ventricles. He thus fearlessly penetrates from three to four inches of brain tissue. It cannot be doubted that this method is infinitely preferable to the limited procedure of Von Bergmann.

**Immediate and Remote Effects of Brain Injury.**—Dr. T. S. Fairchild of Clinton, Iowa, believes that a knowledge of the mode of the reception of the injury is of paramount importance. Patients whose brains have been violently contused by their falling from height present conditions very different from those who have been struck upon the head by a concentrated force. Symptomatically he divides these cases as follows: (1) Indeterminate trauma without symptoms; (2) indeterminate trauma with symptoms; (3) determinable trauma with marked symptoms. Anatomically he divides the cases as follows: (1) Those presenting pressure lesions which give rise to Jacksonian epilepsy; (2) nutritional lesions which, leading to minute sclerosis, often ultimately terminate in insanity. The early surgical treatment gives good results and obviates the possibility of these sequelae; (3) sclerotic cerebral areas often undergo cystoid degeneration.

**Drainage of Ventricle.**—Dr. W. W. Keen of Philadelphia agreed most cordially with the radical views which had been expressed touching the treatment of spina bifida. He regretted that Dr. Fenger had limited his paper to a description of his mode of searching for pus. Probably more frequent and surely more often diagnosed, the localization of hemorrhage seemed to him of equal importance. More than ten years ago, in a paper read before the International Congress, he described a method for reaching the lateral ventricles and traced the paths by which they could best be washed out and drained. He further showed that the opening of these ventricles was not dangerous. He recently operated upon a patient whose skull had been fractured in 1892 and who had developed epilepsy in 1899. Immediately beneath the dura he discovered what appeared to be a large cyst. In the absence of cortical covering he did not even think of the lateral ventricles, and he was both astonished and alarmed to find himself suddenly within their cavity. After removing a grumous material the cavity was drained and the patient recovered with a cessation of his epileptic attacks. In epidural hemorrhages it must not be forgotten that the duration of the period of consciousness which characterizes this lesion may vary from nothing to six weeks.

Dr. McLean of Detroit agreed with Dr. McCosh that spinal supports are useless and he felt that in cases of spina bifida considerable care should be exercised before determining upon operation. The cerebral injuries without doubt present two widely separated types, dependent on whether the patient falls or is struck. The first class is by far the most dangerous type since the whole brain is undoubtedly injured, and the patient should be under careful scrutiny for at least two weeks.

**Operative Treatment of Tic Douloureux.**—

Dr. Frazier of Philadelphia presented the details of new operation for the relief of tic douloureux. In essence it consists simply in a severance of the sensory ganglion, commending itself chiefly for its simplicity, its freedom from hemorrhage and the preservation of the integrity of the cavernous sinus and of the sixth nerve. It calls for a slitting of the zygomatic process.

Dr. R. F. Wier of New York said that surgeons should reach some definite conclusion as to the treatment of cerebral symptoms which do not present classic symptoms. In earlier years he had been in the habit of leaving these cases alone, but observation of the varied accidents which befell them subsequently has led him to believe that the careful exploration of the wound is the conservative surgical procedure. He supports the original operation on the Gasserian ganglion, feeling that the modern paths of approach are in no way superior to the older, and the splitting of the zygomatic arch is certainly an undesirable procedure.

Dr. Earles of Milwaukee declared that, in its close application to abdominal work, surgery had neglected to a lamentable degree the diagnosis and treatment of cerebral injuries. Every trauma capable of fracturing the skull must be capable of injuring the brain. The only safe attitude for the surgeon of to-day is to premise his work with the assurance that there are cerebral injuries and operate accordingly. In 87 per cent. of a large number of cases he has found some form of intracranial lesion.

Dr. Moore of Minneapolis spoke of the indications for operation and the treatment and prognosis of spina bifida. If there be an abundant integument and a narrow pedicle, the prognosis, no matter what the age may be, is usually good. The position of the child is important. It is a sort of reversed Trendelenburg posture. This preserves an equable intracranial pressure no matter at what speed the tumor be evacuated. The chief difficulty seems to have lain in the obliteration of dead space. This he partially accomplishes through the organization of the blood-clot and partly by a free liberation of the erector spinæ muscles from the bone and their close union in the median line.

Dr. Dawbarn of New York cited an anomalous case upon which he had operated for the relief of cortical hemorrhage some years ago. It was done in accordance with the advice and under the eye of the late Dr. L. C. Gray. In the presence of every classic symptom no hemorrhage was found on the operated side. At the autopsy a week later, an immense epidural blood-clot was discovered on the paralyzed side. Dissection revealed the fact that in this case the fibers had not decussated. Although but three similar cases are recorded, he feels sure that it is not a very infrequent anomaly, our unfortunate inability to procure

autopsies having limited our information as to these details.

Dr. McCosh in closing emphasized the importance of early operation in all cases, even including those which gave all the apparent symptoms of a complete severance of the cord.

Dr. Fenger in closing said that the lateral ventricles should always be tapped for diagnostic purposes. He uses a half-inch trephine and feels that the grooved director so cordially indorsed by some surgeons for the exploration of the brain is in no way comparable in efficacy to the long blunt aspirating needle.

#### GENERAL SESSION.

#### SECOND DAY—JUNE 5TH.

Address of Governor S. S. Van Sant, who welcomed the American Medical Association to the State of Minnesota. The freedom of the city had been granted by the mayor. He was pleased to extend to the visiting members the freedom of the State. He spoke with pride of the advantages of the State and after welcoming with special warmth the members from the South, he advocated the Southern territory as a fitting meeting-place for the association in the year of 1902.

**Executive Business.**—The minutes were read and approved and the report of the joint meeting of the General Executive Committee and the Committee on Re-organization, bearing on the report of this latter Committee, was read by Dr. H. O. Walker of Detroit. Dr. E. Harris moved the adoption of the report *in toto* and, after a short discussion by Drs. Bulkley, McCormack and others, the report of the committee on re-organization was carried and the new constitution and by-laws drawn up by that body now becomes effective for the association.

**Oration on Surgery.**—Dr. J. A. Wyeth of New York then delivered the Oration on Surgery (see MEDICAL NEWS, page 891).

**Senn Medical Prize.**—Dr. F. H. Wiggin of New York, on behalf of the Committee of Award of the Senn Medal, reported that two papers only had been received, and as neither of these was deemed worthy of the prize, it was decided not to award it this year.

**Scientific Research.**—Dr. W. H. Welch of Baltimore, on behalf of Dr. H. C. Wood of Philadelphia, reported to the Association that during the year little advance had been made in the work of this Committee owing to the illness of its Chairman. No money had been expended, although ten applications had been received. He advocated the reaffirmation of the grant, its increase to \$1,000 and an increase above the \$100 allowed to an individual worker. In this manner it was thought that the better carrying out of the original desires of the founders of the grant would result.

**Army Canteen Question.**—Dr. Seamans of



New York desired the Association to take some action on this question. After much discussion the matter was referred to the Committee on Legislation.

**Rush Monument Fund.**—Dr. H. D. Holton of Brattleboro, Vt., reported an addition of about \$1,880 to the Fund during the current year. This, with the promise of the Pennsylvania Medical Society of \$2,000 when the Fund actually reaches the desired amount, gives a total of \$13,941.00 in the Treasury.

**Officers.**—The following officers were elected: President, John H. Wyeth, of New York; First Vice-President, Alonzo Garcelon of Maine; Second Vice-President, A. J. Stone of St. Paul; Secretary, George H. Simmons of Chicago; Treasurer, Henry D. Newman of Chicago; Trustees, Drs. Fulton, Grant and Happell.

Saratoga was chosen as the next place of meeting.

#### SECTION ON MEDICINE.

##### SECOND DAY—JUNE 5TH.

**Blood Chemistry.**—Dr. W. D. Kelly of St. Paul read a paper on the chemical microscopic value of blood examinations. He detailed the recent chemical investigations of the blood and recalled the salts in solution in the plasma. One noteworthy recent discovery is that of a diastase in the blood. This would coagulate the serum of the blood, but is inhibited by the nuclein present. There is under special circumstances free fat in some form, stearin, olein, or palmitin present in the blood. In fevers acetin can always be found and sometimes in readily recognizable quantities.

**Acidemia.**—Dr. Kelly has succeeded in injecting large quantities of glacial acetic acid, as much as 1 c.c. into rabbits without causing death. In these cases the blood gives the same test as in the supposed acid coma of diabetes, yet the animal is but very little affected in its general condition. It seems probable, then, that it is not the more or less coincidental presence of excess of acid in the blood that causes diabetic coma, but some other substance present with the acid. Large quantities of alkali may also be injected into the animal circulation without causing death, though materially altering the blood reaction.

**New Method of Blood Preparation.**—Dr. Kelly then described his apparatus for fixing blood specimens. It consists of a copper box that fits over an ordinary incandescent lamp. This supplies a very constant source of gentle heat and does away with the necessity of having elaborate apparatus for fixing blood specimens, yet absolutely assure their permanence. Dr. Kelly prefers to take specimens for blood examination in the early morning before the patient has eaten, so as to have the circulating blood as nearly as possible in its normal equilibrium.

**Pernicious Anemia.**—Dr. Thomas MacCrae of Baltimore gave some details of forty cases of pernicious anemia which have occurred during these last twelve years in Professor Osler's service at Johns Hopkins Hospital. These cases serve to throw light on certain disputed points in this important disease. These forty cases occurred among 12,500 medical cases, which serves to show the rarity of the disease. There were 32 males and 8 females. Usually male patients preponderate in pernicious anemia statistics, but the reason for this disproportion is not clear. Two of the cases were in the colored race. The negro is said to be spared by this disease, but Dr. Osler's observation show they are not. The race, however, is relatively immune. While the proportion of black to white patients was 1 to 8 the proportion of those attacked by pernicious anemia was 1 to 20. This confirms what has been found with regard to traditions of negro immunity in other diseases. There is a comparative lack of liability to many diseases, but this does not rise to positive immunity. The more careful the investigation the more cases of special disease found among the negroes.

**Age and Other Factors.**—Most of the patients were in the fifth decade of life, more than one-half were over forty. In only 3 cases was mental worry or emotional strain mentioned as a positive causative factor. These are considered important elements in causation in private practice, but are not often referred to by hospital patients. In only one of the 8 affected females was there any question of the association of pregnancy or lactation in the causation of the disease. This is all the more surprising as these states are said especially to predispose females to blood disturbances of various kinds and above all to pernicious anemia.

**Oral Sepsis.**—Hunter's recent statement that septic conditions in the mouth were often causative of the disease led to a careful study of mouth conditions that might be provocative of serious trouble. In 6 patients healthy mouths were found. This investigation led to the examination of the mouths of all patients coming to the hospital. The proportion in which oral sepsis of greater or less degree existed was very high. It was not as high in pernicious anemia as in many other pathological conditions to which, however, it evidently bore no causative relation. Dr. Hunter's discovery of oral sepsis in so many cases is not surprising. It is, however, only a coincidence, for oral sepsis is so common among hospital patients as to be almost the normal condition. Only some special circumstances will have prevented its occurrence.

**Gastro-intestinal Disturbance.**—A fact that confirms this conclusion contrary to Dr. Hunter's claim is the rarity with which gastro-intestinal disturbance is associated with pernicious anemia. In less than one-third of Professor Osler's cases

were gastro-intestinal symptoms noticeable. It is manifest that it is not the infection of the stomach from the mouth that is at the bottom of the condition.

**Symptoms Most Prominent.**—The first complaint as a rule is the progressive and unaccountable weakness. This is always an important preliminary feature of the disease the development of the characteristic lemon-yellow color often calls attention to the disease. It seldom fails to make its appearance. Loss of weight is a striking and very common symptom that is usually not found insisted on in the text-books of medicine. In more than one-half of the Johns Hopkins cases this was noted early in the course of the disease. About one-quarter of the patients retain their plump appearance, though being very weak. Hemorrhages from mucous membranes, which are often said to be a characteristic symptom, were seen in 10 cases while under observation. Abdominal examination showed that the liver was practically never enlarged. In 6 the spleen was somewhat enlarged, but not to any serious extent, except in 3 anomalous cases that seem to deserve classification by themselves under the term splenic anemia. They were reported as such by Prof. Osler three years ago. In three-fourths of the patients rises in temperature were noted. Ten cases of pernicious anemia ran their course and were discharged better without having had any fever. As a rule,  $101^{\circ}$  F. was the average highest daily temperature. Occasional rises to  $104^{\circ}$  F. were seen however and once even a rise to  $106^{\circ}$  F. No other cause for the temperature disturbance could be found in any of the cases except the blood condition.

**Hemoglobin Average.**—In the 40 cases this was exactly 30 per cent. The average blood-count was just one and one-half millions. The disturbance of the ratio between hemoglobin reduction and corpuscle reduction was not found. A reduction in the number of mononuclear leucocytes was not found to be so serious a prognostic sign. Many of the cases in which this occurred were discharged cured. The presence of megaloblasts is of serious prognostic import. The reduction of the red blood-cell count below one million is cause for a bad prognosis. Of 16 cases in which such a reduction was noted only 4 lived to be discharged from the hospital. As to pathognomonic signs in the blood there are none though the presence of megaloblasts is the surest single sign of the existence of pernicious anemia.

**Differential Diagnosis.**—The most important affection requiring careful differentiation is cancer of the stomach. Usually in this the red blood-count is not below one and one-half millions, though occasionally it is in very advanced stages in pernicious anemia at the time it comes to the hospital the red blood-cell count is seldom above one and one-half million and may be below a million. Rarely is there any improvement in the blood condition of cancer. Rarely does some

improvement at least temporarily fail to occur in pernicious anemia.

**Leucocytosis after Hemorrhage.**—Dr. Geo. D. Head of Minneapolis said that a number of investigators have found that after hemorrhage in man there is a distinct leucocytosis. This is surprising as, of course, white cells are lost during the hemorrhage as well as red cells. Dr. Head's experiments seem to afford a rational explanation of the paradox. In animals artificial hemorrhage is followed first by lowering of the number of white blood-cells, leucopenia, and then some hours later by leucocytosis. This same state of affairs probably obtains after hemorrhage in the human being. There is a preliminary fall in the number of leucocytes followed by the hemorrhagic leucocytosis noted by so many observers. In the discussion Dr. MacCrae of Baltimore said that after hemorrhage in typhoid fever where the case was suspected and blood-counts were being made every hour, he has seen this primary leucopenia and its presence may be a valuable diagnostic sign to differentiate hemorrhage from perforation.

**Osmotic Pressure.**—Dr. Heinrich Stern of New York said that too much stress has been laid on the physiologico-chemical factors in the production of uremia. This has excluded the physical factors and especially the import of osmotic tension. The intravenous injection of urea and even of the whole urine has not given rise to the symptoms of uremia, as was anticipated. The lacking etiological factor is the disturbance osmotic pressure by the retention in the blood of substances that should be eliminated. There is no new chemical substance in the blood of two uremia patients only an excess of certain substances normally existent there. All organic matter is saturated with water. The cells of the body are more or less permeable for water. If the contents of the organism in soluble salts and in water remain unaltered, so that for a certain period neither salts nor water are introduced nor eliminated, all the watery constituents of the organism would become one homogeneous liquid and the same osmotic pressure would prevail over the entire system. The molecules of a number of compounds when dissolved are divided up and are dissociated into ions. The higher the dilution, the more perfect the dissociation as a general rule. There is no vital process in which diffusion or osmosis does not participate. Conditions for the evolution of osmotic pressure always exist in the organism, for whenever two solutions come in contact by means of a semi-permeable wall, osmotic tension is displayed. When the excretory activity of the kidney is materially interfered with, the products of metabolism are retained in the blood. There are a great variety of substances dissolved in the blood-plasma, each with its special effect on osmotic tension. All of these have a tendency to diffuse toward the less concentrated body liquids. Ultimately all the fluids of the body exhibit a similar degree of concentration. This degree of



concentration is accompanied by a series of manifestations, coördinate and determinate, which have been grouped together under the name of "uremia." This is really, if we may call it so, a mechanical intoxication not one of chemical origin, but one due to an abnormal increase in osmotic tension of the blood-plasma and the fluids of the body. According to Dr. Stern's experiments the phenomena which occur in the blood after the injection of large amounts of concentrated salt solutions are the same as those in uremia. They make their appearance together with the increase in the concentration of the blood, when the elimination of the accumulated substances from the blood on account of the exhaustion of the resorptive qualities of the tissues does not occur any longer. Novy already noticed in dogs tonic and clonic convulsions after intravenous injection of a ten-per-cent. sodium-chloride solution in such amounts that the blood had attained twice its former concentration.

**Biological vs. Physical Factors.**—In discussing Dr. Stern's paper Dr. Walsh of New York said that Dr. Stern has done a service by calling attention to the physical factors that may enter into the causation of symptoms of uremia. To limit the etiology of the symptoms to physical factors alone is to take a very one-sided view of a complex problem. Osmosis and osmotic tension were some years ago advanced by physiologists as an all-sufficient explanation for many vital phenomena. We have gotten beyond the idea, however, that cellular membranes are the active elements in vital activity. The separate cells in their life processes accomplish much more than can be explained on the principal of osmosis. Now that we have advanced a step to the application of the principle of osmotic tension to the individual cells, the influence of this extraneous process must not be exaggerated. Intracellular life is the essential active element in all body changes and the metabolism of the cell remains almost as much a mystery as ever before.

**Circulatory Disturbance and Liver Cirrhosis.**—Dr. Stockton of Buffalo read a paper on this subject with special reference to the inosculation of the branches of the portal system with the general systemic venous circulation. He said that the most important thing in true atrophic cirrhosis is the circulatory disturbance with congestion of abdominal organs, ascites, etc. There are always some inosculations of portal systemic circulations. Blood does not flow from portal to systemic veins, because blood-pressure in the portal vein is lower than in systemic venous circulation. When, because of the increase of blood-pressure in the liver, due to the atrophic shrinkage, the portal circulation is forced into the systemic, various toxic conditions are produced. These often cause headache, general malaise and discomfort and are best relieved by a saline cathartic. Friederichshalle water seems best suited for this purpose.

**Cirrhosis Without Ascites.**—In many of

these cases the reason for the failure of the ascites to occur is that the portal circulation relieves itself by anastomosing freely with the systemic venous apparatus. This produces enlargement of the veins, especially of the esophagus. These veins may rupture after enlargement and so give rise to fatal hemorrhage. When the atrophic cirrhosis is suspected and no ascites has developed, it is well to be wary of the possibility of the occurrence of serious hemorrhage. In one instance where Dr. Stockton was able to follow the case from the beginning, he foretold the possibility of death from esophageal bleeding and this actually took place. In all cases where the ascites is small in amount or absent, the portal circulation has found some vent for its blood and serious disturbance may be expected. A series of cases was detailed, most of them with autopsy, in which death took place from hemorrhage in what looked like an especially benign form of cirrhosis of the liver.

**Cirrhosis from Metallic Poisons.**—Dr. Victor C. Vaughan of Ann Arbor, Mich., said that all cirrhosis of the liver is due to the presence of a toxin brought to the liver. The cirrhosis develops in different ways according to the avenue by which the toxic material gains an entrance. If it comes through the arteries, then the sclerosis starts from the coats of the vessels and extends into the liver substance. This is the arterio-sclerosis of the liver described by the Germans and accompanied by the like changes in arteries in other parts of the body. If the poisonous material comes to the liver from the digestive tract, then the growth of connective tissue begins around the portal vein and gradually extends. Alcoholic cirrhosis is the most familiar example of this type. If the bile contains the irritating matter, then the cirrhosis takes the form of the biliary or hypertrophic cirrhosis.

**Lead and Copper Cirrhosis.**—Dr. Vaughan has seen these mainly in house-painters. They neglect to wash their hands before eating and so they swallow no inconsiderable amounts of the metal which accumulates and produces symptoms of poisoning. Lead poisoning also occurs among the attendants on smelters who breathe in the fumes of the metal usually mingled with arsenic. Cirrhosis that develops thus run a clinical course and, unlike that of alcoholic cirrhosis, needs about the same line of treatment. The first and most important consideration, as in the case of the alcoholic patient, is to remove the sufferer from all contact with the toxic material to which he owes his developing condition. The effect of the soluble salts of the metal aluminum upon the liver especially, as seen in baking-powder, is an important question for public health. Dr. Vaughan has found that in animals the soluble salts of aluminum in ordinary alum produce the fatty changes in liver-cells which are so characteristic of cirrhosis of the liver in man.

**Treatment of Cirrhosis.**—Dr. John H. Musser of Philadelphia said that while cirrhosis of the liver is hopeless as regards ulti-

mate cure, much can be done to alleviate the symptoms. The general condition of the patient must be maintained at a high degree of vital resistance. Bland unirritating food must be given, free catharsis must be employed and the skin must be kept up to the level of its highest efficiency for eliminative purposes. Surgeons are too ready to operate upon cases of hemorrhoids without consulting the condition of the liver. Where cirrhosis exists operation must not be permitted. As the result of the absence of the liver function, the resistive vitality of the organism against infection is much lowered. The grave processes that begin in the rectum at such times are prone to be long and obstinate to treat. Dr. Musser has seen three cases in which such inadvisable operations have been followed by death. Because of the liability to piles the stool should be kept constantly soft and constipation avoided as far as possible.

**Treatment of Ascites.**—Dr. Musser has found calomel, gr.  $\frac{1}{40}$  every three hours, almost invaluable for its diuretic action. Niemeyer's pill is also deservedly a favorite prescription. As a diuretic apocynum cannabinum is of great assistance in obstinate cases. Most cases of ascites will prove obstinate to drug treatment. Tapping is the only recourse, and this should be performed early and often. Where tapping has to be repeated frequently, permanent drainage is advisable. Tapping is of itself curative. It does not affect the cirrhosis, but it alters conditions in the abdomen so that accumulation of fluid no longer takes place. In one reported case tapping was performed 190 times. The maintenance of permanent drainage involves no risk. By permanent is meant drainage which is continued until the ascitic condition is relieved.

**Anastomosis Operation.**—In certain cases the symptoms can be relieved by producing anastomosis between the vessels of the abdomen and those of the omentum. In reported cases this has benefited the patient so much as to constitute a practical cure. The peritoneum is scarified and the omentum is fastened to it; adhesions then form in which anastomotic blood-vessels are not rare. The cirrhotic cachexia disappears in many cases as if by magic. Recurrences of symptoms have so far not been noted in the operative cases. Over 20 satisfactory operations have been reported. Even where success is not marked the operation does no harm and is not of itself dangerous.

**Biliary Cirrhotic Fever.**—In a case of biliary hypertrophic cirrhosis the patient began to suffer from recurrent daily chills and fever. No malaria was present and quinine did not benefit the case. The fever was so exhausted that the end seemed not far off. Laparotomy was done and the gall-bladder incised, careful cultures were made of the bile, but it proved to be sterile. This part of the work

was done by Dr. Simon Flexner. A permanent biliary fistula was made and this did away with the chills and fever. This operation of biliary fistula seems sure to acquire vogue in these cases. Undoubtedly in this case it proved life-saving.

**Latent Cirrhosis.**—Dr. Frank Billings of Chicago said that in some cases the insidious preliminary symptoms of cirrhosis may be detected. Often there is intestinal disturbance with general symptoms, at times localized to groups of nerves. Lumbago-like pains and sciatic neuralgia may be due to defective function of the liver. Under hygienic régime with special attention to the liver these will disappear. Muriate of ammonia is sometimes an effective drug in the conditions; calomel is always useful.

**Biliousness in Incipient Cirrhosis.**—Dr. Herrick of Chicago said that the vague group of symptoms, lassitude, headache, tenderness over liver, with constipation and distaste for food, is connected by tradition with the liver. Oftener than is thought these symptoms actually constitute the preliminary signs of developing hepatic cirrhosis. Where they occur frequently their treatment should be undertaken with this view. Calomel should be used at intervals in these cases and chloride of ammonium will be found of good service. Besides atrophic and hypertrophic forms of cirrhosis Dr. Herrick considers there is a mixed form of the affection.

**Bronze Diabetes.**—Dr. T. B. Fletcher of Baltimore reviewed the four cases of this disease that have been reported in this country. The disease is rapidly fatal. Practically it never lasts more than one year. Thirty cases, all in males, have been reported. Nearly always there was an alcoholic history. All the patients were over thirty years of age usually in the fourth or fifth decade. Seventeen of the 30 cases occurred in France. It has been said to be more common there, but it seems that the disease has been looked for more carefully there than elsewhere. It is sometimes mistaken for biliary cirrhosis of the liver. There is always overgrowth of connective tissue in the liver. In 22 cases some connective tissue changes in the pancreas were noted. Gross changes with pigmentation of epithelial cells of the gland were found. This is thought to account for the occurrence of diabetes in the cases. On the other hand, Charcot considered the diabetes primary.

**Hemachromatosis.**—Dr. Recklinghausen showed that there was a condition in which iron in two forms was deposited in the tissue. Bronzing also took place in this disease, and lesions of the liver were common. In one of Von Recklinghausen's cases diabetes developed before the end. This disease, hemachromatosis, seems to be an early stage of the French bronze diabetes. The same pathological lesions occur in both. Only very recently



has the notion of the identity of these diseases been generally accepted.

**Bronze Diabetes and Addison's Disease.**—Dr. Fitcher in closing the discussion said that it is necessary to take care not to mistake bronze diabetes for Addison's disease. Without examination of the urine the mistake is easily made. In the early stages of hemachromatosis the differentiation may be extremely difficult. The operation of producing anastomosis in hepatic cirrhosis has always done good and at Johns Hopkins is considered a very valuable therapeutic advance.

**Rheumatic Simulants.**—Dr. James J. Walsh of New York said that acute rheumatism is well known, but that the series of cases diagnosed as rheumatic and supposedly due to chronic rheumatism is a heterogeneous collection of cases of most varied etiology. Relaxation of the tissues around joints, as in flatfoot, is the basis of many of these cases. Old sprains, dislocations, and breaks in the neighborhood of joints, give rise for years after their occurrence, especially in older people, to a series of painful symptoms. In damp weather these are always worse; hence the diagnosis rheumatism and the treatment by antirheumatic remedies. Most of the so-called antirheumatics are really depressants and often irritate the stomach and kidneys thus interfering with nutrition and elimination. This emphasizes instead of ameliorating the condition which goes on from bad to worse.

**Toxic Joint Symptoms.**—Joints often become painful in connection with urticaria from digestive disturbance. Arthritic symptoms are common after the administration of diphtheria antitoxin. Ordinary rheumatism of the acute variety is surely microbic, but the presence of bacteria is not necessary for the production of joint symptoms. The tired feeling that accompanies indigestion is often a symptom of the effect of the non-elaborated food substances absorbed into the circulation and affecting first the sensitive mechanism of the joints. The joint structures themselves are more easily affected than other tissues which do not have to work so hard or are not exposed. The occurrence of painful joints should be the signal for careful examination of the patient and the removal of all constitutional disturbances.

**Occupation Neuroses.**—A prominent group of joint pains are associated with these neuroses. Not alone the penman, telegrapher, violinist or typewriter, may be affected, but any person engaged in an occupation requiring the constant use of a definite group of muscles. Even sweeping, for instance, or ironing or filing may produce at first painful and then crampy conditions. These always develop on a neurotic basis and usually in run-down subjects. The pain is often referred to neighboring joints. It is wonderful how often these cases are discussed as chronic rheuma-

tism. If treated by the salicylates the pains are lessened for the time being, but the condition gradually gets worse. Often these neuroses become noticeable only after the patients have become run-down in health. As a rule, a gain in weight is followed by improvement. Then the patients should be instructed how to use their muscles to the best mechanical advantage and should be warned of bad habits that invite muscular spastic conditions and pain.

**Rheumatism and Flatfoot.**—Dr. Stockton of Buffalo said in the discussion that the allusion to flatfoot and its being taken for rheumatism is a very practical point. Dr. Stockton has seen cases in which the pains were referred not to flatfoot itself, but to distant joints, as the knee and even in one case the hip. Or undoubtedly too much medication on general principles for rheumatism is indulged in and Dr. Walsh does well to call attention to it. More careful study of patients is needed and new rheumatic remedies, though so many are being put on the market.

Dr. Webster of Chicago said that the term rheumatism is too often a cloak for hasty diagnosis. If practitioners would study their cases more there would be less supposed rheumatism to treat. It is not enough to relieve pain temporarily, but the root of the trouble must be found and the underlying conditions corrected. Dr. Walsh's cases represent the conditions that are oftenest mistaken for rheumatism. Their treatment constitutes a special problem in each case.

**Acromegaly.**—Dr. Charles Lyman Greene of St. Paul presented a case of well-marked acromegaly in which the hands were especially involved in the acromegalic condition. Some myxedema is also present. This last condition has been noted in other cases and seems to show that where one ductless gland is affected others may also prove to be in a pathological condition.

#### SECTION ON SURGERY AND ANATOMY.

##### SECOND DAY—JUNE 5TH.

**The Mortality of Appendicitis.**—Dr. John B. Deaver of Philadelphia based his statistics upon 268 cases of appendicitis operated on in the German Hospital in 1900. Of the total in number operated 144 were acute, 124 chronic. He divided the cause of death as follows: (1) Prior to operation; (2) at the time of operation; (3) post-operative. For all cases of appendicitis uncomplicated by intercurrent disease, his statistics give a mortality of 15.9 per cent. In every case the appendix was removed. Of the chronic cases operated upon, but one death occurred, this having been caused by a rupture of an ovarian cyst. His statistics are peculiarly full and reliable because, although occasionally prosecuted he

nevertheless autopsies every case dying in his service. Considering the mortality in general, he said that septic peritonitis is invariably the cause of death. It is induced in a variety of ways, failure to "wall off," or gut obstruction with the formation of adhesions. There is no possible way of assuring one's self which will be the fatal attack although experience shows that they usually increase in severity. Death following operation in chronic cases is due invariably to the factors which may be fatal in any laparotomy. As yet, the fulminating class of cases is lethal despite any promptness of operation.

**Technic.**—Second only in importance to the extirpation of the appendix is the thorough exploration of the region for hidden pockets of pus. Dangerous in any position, those located in the midline, safeguarded only by the lesser gut, are the most to be dreaded. Operation along these lines insures (1) absence of fecal fistula, (2) subsequent attack, and (3) necrosis of bowel-wall, which is doubtless due to septic embolism of the mesenteric vein. Of eleven cases not operated on in his service three died and six left the hospital with bunches in the right side. Of particular importance is the position of the appendix. When located posteriorly, the termination is not apt to be fatal, because of subsequent ovarian involvement, delay is particularly dangerous in females. Too often normal ovaries have been sacrificed where the appendix was offending. Every death occurring in the second attack must now be recognized to have been preventable. Who must assume the responsibilities of these deaths? Under the term appendicitis is somewhat carelessly grouped a series of protean conditions which give an unusually perplexing and varying number of pathological phases and symptoms. It is a melancholy fact that in every case lost there was a time not taken at the flood. In the absence of true pathognomonic signs, perhaps the best which has yet been recognized is the invariable muscular rigidity over the diseased area. He cited a case which graphically exhibited the importance of this sign and the comparative uselessness of pain. This is in many cases referred to the healthy side. Leading to the fatal goal which is not appendicitis, but rather suppurative peritonitis, there are three sections, *i. e.*, (1) where the inflammation is limited to the appendix, (2) where the abscess is circumscribed, and (3) where septicemia is beginning. Treatment for all conditions lies in the general principle of early operation. In certain conditions continuous irrigation is advised extending at times over a period of four days. From a number of cases it is concluded that salt solution may impede the dissemination of the disease.

**Knot Within the Lumen in Intestinal Surgery.**—Dr. F. Gregory Connell of Chicago, by

a series of exquisite casts, demonstrated his new technic for enterorrhaphy for the prevention of drainage along the needle path. The position of the knot is most important in enteric suturing. It must lie external to the serous surface. Since it cannot be extra-abdominal the only remaining place for it is upon the mucosa. It is here accordingly that his technic places every knot tied. It is an interesting fact that modern surgeons who have written so widely on the value of the submucosa should have overlooked the important writing of Gross of Louisville, who, not alone was well aware of the existence of this layer, but keenly recognized its surgical value. In the classic work of Halsted, in which the layers of the gut were magnified some thirty-three times, the artist failed to give a corresponding increase to the needle. Accordingly in the picture it seems a very simple matter to divide the tissue of submucosa with an ordinary needle. Dr. Connell presented drawings in which a corresponding increase had been made in the size of the needle which laughably demonstrated the impossibility of threading the submucosa. The thickness of this layer is but one-two-hundred-and-fortieth of an inch, the needle being approximately one-fortieth. The particular advantage of his technic is claimed to be (1) less danger of leakage; (2) no yielding; (3) no adhesions; (4) speed.

Dr. Steele of Chicago expressed great pleasure that there existed in this country a hospital where autopsies were made in every fatal case, even at the risk of legal involvement. He added a case to those reported by Dr. Laplace. A child who had swallowed a shawl-pin two and a half months previously presented all the typical symptoms of acute appendicitis. He operated immediately, and found, not the lesion expected, but an abscess caused by the pin perforation. Constant irrigation, which gives such brilliant results in septic joints, must of necessity be of equal value in the abdomen.

Dr. J. B. Murphy of Chicago said that the profession is indebted to Dr. Deaver for the masterly and unflinching manner in which for years he has insisted upon early operation in appendicitis. He asked the following questions: What technically is suppurative peritonitis? Does it signify the accumulation in the body cavity of a cream-colored exudate, or is it rather an abrasion of its shingles, its tessellated layers of endothelial cells? Is not the loss of gloss on the serosa one of the most important indications of this grave condition? Is the relief of tension of as great importance in the abdomen as elsewhere, and is irrigation desirable after operation? Can a diagnosis other than tentative be made of intraperitoneal conditions from the symptoms which are now recognized? After many fatal cases, his faith has been broken.

Dr. Knight of Connecticut emphasized the importance of leucocytosis. He said that the



washing out of the abdominal cavity at the time of operation is infinitely to be preferred to continuous irrigation. Dr. Andrews of Chicago asked, Shall we or shall we not drain or wash out? Probably all cases of so-called general peritonitis are localized. All which are truly diffuse perish. Fowler's position is of the utmost importance. Patients too weak to be otherwise supported, he ties up in bed. The Connell suture is unquestionably the best mode of intestinal anastomosis.

Dr. Moore of Minneapolis said that Dr. Deaver's doctrine in the hands of anyone but Deaver is pernicious and dangerous. Extremists, however, in each direction are absolutely necessary. It is unfortunate that such men should teach. In general practice it is impossible to follow the cast iron rules of Deaver.

Dr. Robt. T. Morris of New York said that principles must be taught students of medicine with as little hesitation as they are expounded to students of law. A priori they would then, in probably all cases be instructed to operate as early as possible. Leucocytosis is of collateral rather than of determining interest. The treatment of appendicitis consists in a relief of the abdominal tension by evacuation and the establishment of conditions favorable to the creation of phagocytes by the organism. Irrigation and packing use up needed strength. Blood-washing, relieving the system with astonishing speed of accumulated toxins, is of far greater importance than abdominal lavage.

Dr. Deaver in answer to Dr. Murphy said that when the serosa is dull and congested, it is safe to feel that the case had passed beyond human help. The relief of abdominal tension is of paramount importance and Dr. Murphy is unquestionably right in saying that no one can as yet establish a diagnosis prior to operation. Experience has taught him, however, that cases in which the belly-walls are tense, where leucocytosis and temperature are absent, where the pulse is elevated, and the onset has been sudden, present the gravest complications. The blood-count is of value only in these very rare instances where leucocytosis is the only factor favoring operation. We must have teachers who are not afraid of their convictions. Early operation is as surely the *sine qua non* of the treatment of appendicitis as there is a God in Heaven.

**Teaching of Regional Anatomy.**—Dr. Jackson of the University of Missouri described a new method for teaching regional anatomy by sections and drawings. He exhibited a series of specimens which had been prepared by injecting the body with 50-per-cent. formalin, from which his students made tracings of every organ in the body, its relation to its neighbors and to the surface. Decalcification, except where it may be put to the extremely thin sections of the head, is unnecessary. The sole instruments used are a long butcher's knife and saw.

**The Nature of the Cancerous Process.**—Dr. Roswell Park of Buffalo said that excepting tu-

berculosis no medical problem has received as much attention as the question of the etiology of neoplastic growth. Among the oldest of the theories was the dietetic. This possesses, of course, but a historic value. The introduction by Cohnheim of the embryological theory marked a very distinct step forward for it explained the presence of certain cells in teratological growth, while not explaining their development. The only remaining theory worthy of consideration is the parasitic. It is not difficult to conceive of an infinitely broad distribution of a body the line history of which is as yet shrouded in mystery. Credence is given to this hypothesis by the interesting relations which observations have shown to exist in many forms both of flora and fauna. To make these observations and to correlate the thousand and one details attendant upon collecting data from every possible source demand the service of the clinician, the pathologist, the histologist and the chemist. He outlined in detail some of the arguments in favor of the protozoic nature of the infection, as follows: (1) In the vegetable world tumors are frequent and are fairly well understood. Many of them eventually destroy their host, this type being known as the tree cancer. Almost invariably of parasitic origin the relation between trauma and growth has in these cases often been observed to be a factor. They occur frequently; for example, at sites where water alternately freezing and thawing has produced a lesion in the tissues. Through this the parasite has entered. (2) Comparatively pathology furnishes data of great value. In the invertebrate numerous tumors have been studied, all of which are undoubtedly of protozoic origin. (3) The infective grunulomata, whose etiology is now so well known, yield to precisely the same sort of treatment as do the carcinomata, furnish one of the strongest arguments in favor of the parasitic theory. (4) Metastases studies from almost any standpoint likewise give credence to the belief. (5) The auto-infectiousness of carcinoma, which is well known, is another favoring factor. The cancer bodies, so-called, must be one of two series—either they are cell degenerations, or they are parasites. They are never seen, nor can they be produced in any except a cancerous process.

**Difficulties Attendant Upon the Research.**—Far beyond the border land of any other known scientific explorations, this search into the etiology of cancer carries one into utterly untrodden paths, where laws applicable to the world of bacteriology have but little hold. Koch's laws, for example, which have been used by the opponents of the theory to cast upon it doubt and derision, are very likely in no way applicable to this lowly form of animal life. While it is true to a considerable extent, it has been found possible to conform to them, a number of failures to do so has been one of the strongest factors in the circumstantial evidence that this parasite has but little relation to the bacteria.

Because of the paucity of successful experimental work, accidental clinical explanations are of the greatest value and should always be reported.

**Treatment.**—While it is yet too early to formulate any rational treatment which shall be directed against the development of this parasite, there is ground to hope that in the not far distant future some drug will be found which, similar to quinine, will terminate its life history.

**The Carcinoma Question.**—Dr. Nicholas Senn of Chicago said in abstract: (1) The question of the etiology of cancer is the most important medical research of the day; (2) carcinoma results from a typical proliferation of epithelial cells; (3) as carcinoma originates in epithelial cells, it is impossible for it to develop in mesoblastic tissues; (4) histology does not support the parasitic theory; (5) the extension of any tumor to an adjoining tissue is positive proof of malignancy; (6) the increase of carcinoma is more imaginary than real; (7) heredity is a factor which has been much overlooked; (8) age, while rarely over forty, is not unknown below twenty, in which case it is often extremely malignant; (9) seldom follows single injury, often frequently repeated traumas; (10) inoculation has failed to support the parasite theory; (11) direct injection of astringents into the carcinomatous tissues does not stay growth; (12) all sera are worthless; (13) positive cure cannot be claimed until after the twelfth year.

**Early Diagnosis of Carcinoma.**—Dr. Charles A. Powers of Denver said that it would be trite to outline the need of earliest possible recognition, but about nine per cent. of all cases of carcinoma applying to the surgeon reached him early enough to insure favorable results. It is of the utmost importance that the laity be educated in this matter, as has been done so thoroughly in the case of tuberculosis. The value of blood examinations and of the gastric juice in supposed cases of cancer of the stomach in its latent form are of but little value. Sera are now being produced successfully which in certain latent forms of cancer may have a use similar to tuberculin in tuberculosis diagnosis. This must in our present lack of knowledge rest on clinical observation supported by the microscope. It is questioned by some whether there should be a preliminary microscopical cut. Halsted, for example, says that no tumor should ever be harpooned or cut. On the other hand his colleague, Kelly, does so in every case of cancer.

**Mammary Carcinoma.**—Drs. W. S. Halsted and J. C. Bloodgood of Baltimore spoke of the multiform varieties of tumors of the breast, which made it difficult to formulate any general law on all of the forms. All forms of breast tumors do not call for removal. From the attitude of general laity it seems impossible at times to follow out one's best judgment and general removal is often demanded. From an examination of the cases occurring at the Johns Hopkins Hospital, 426 in number, 2.4 per cent. were

carcinomatous and of these there were 39 per cent. which were operative. When the question of removal is under consideration, the character of the tumor determines the range of the operation. Some do not call for removal at all. Others demand the removal of the tumor at once, and still others that the tumor, as well as a part of the breast should be excised, and in still others, especially when the tumors are multiple and the infection widespread, the muscles of the breast, as well as the glandular and lymphatic structures, should be ablated. Perhaps the most important point with reference to the treatment of the tumors of the breast is the early diagnosis of the condition. Most cases are seen too late and the disease has progressed beyond the point of hopeful prognosis.

**Carcinoma of the Cecum.**—William J. Mayo of Rochester, N. Y., said that ileocecal carcinoma is not by any means infrequent. Seven per cent. of all malignant growths of the bowel involves the cecum. They may occur at any age and, as is well known, their almost invariable tendency is to form annular constrictions. The duration may often be very prolonged, sometimes to the extent of twelve years. Of the symptoms pain, diarrhea, and tumor, are the most constant and of the greatest diagnostic value. The differential diagnosis from tuberculosis is difficult. Desmoides and impaction of feces are other conditions which occasionally obscure the diagnosis.

**Resection of High Rectal Carcinoma.**—Dr. Robert F. Weir of New York said that all surgeons were agreed that Kraske's operation presents difficulties of technic which are sometimes insurmountable. Especially is this true in the case of high line growths. Maunsell suggested the pulling down of the tumor via the anus, producing a sort of artificial intussusception. The objection to this procedure is that it cannot always be delivered through the dilated and freely incised anus. His operation consists in the opening of the abdomen, in separating the bladder from its attachment to the gut, and in freeing the latter from peritoneum to its last rectal segment. He then ties the middle sacral artery, ligates the gut below the tumor, divides it, carries the tumor and upper gut through the abdominal wound, and removes the tumor. An assistant now passes a delicate forceps through the dilated anus and seizes the two cut margins of the gut, drags them with but little difficulty through the anus, where with perfect freedom a through-and-through anastomosis is made. The reunited gut is without difficulty returned to the pelvis, a drainage-tube is inserted in the perirectal space, and the abdominal wound is closed. Enough cases have not been operated by this method to justify its too warm praise, but in those which Dr. Weir has done it has seemed to him satisfactory in every detail.

**Surgical Treatment of Malignant Disease.**—Dr. F. S. Dennis of New York said that careful study of life-insurance statistics shows that there has been an appalling increase of cancer



during the past thirty years. Most of these statistics are of recent gathering, as the life of most of the life-insurance companies is still so short that reliable statistics are not as yet correlated. A very striking feature is an enormous increase of this disease in communities which by active emigration have lost the younger elements, leaving the older inhabitants. This naturally is an apparent rather than a real increase. An early excision of the tumor will result in 83 per cent. of cure. Should recurrence occur within three years it is probably a case of reinfection rather than of metastasis. Medicinal treatment is not advisable. Recent reports of the advisability of using thyroid extract are not borne out by large experience. Thyroid may relieve the pain and mitigate the odor, but is not in the least curative. Caustics externally may be indicated in certain restricted cases. Coley's fluid has proven of service in the treatment of sarcoma.

**Method of Operating on Carcinoma of the Tongue.**—In the absence of Dr. J. Collins Warren of Boston Dr. Christian Fenger of Chicago outlined his method of operating on these cases. He limited his discussion to those conditions in which the posterior half of the tongue, back as far as the soft palate, was involved. As yet the history of these cases forms but a melancholy chapter of surgical annals. The cures cannot be rated higher than ten per cent. and, if these cases of carcinoma of the tip of the tongue are included in the statistics, it gives a much higher percentage of fatality where the growth is posteriorly situated. A knowledge of the distribution of the lymphatic vessels and glands is here of great importance, as in cancer of the breast; indeed, until this fact is recognized the statistics will not improve. Death invariably occurs in cases not operated upon in from five to eighteen months. No ulcer of the mouth should be allowed to pass without microscopic examination. No antisyphilitic treatment is indicated because of the danger of delay. The two factors most dreaded by patients when they are told that they are to lose the whole tongue are aphonia and maldegultition. By the introduction of plastic surgery the immense aggregation of scar tissue, which develops under the old method of operating, contracts, fixes the floor of the mouth, and, far more than the loss of the larynx, leads to these grave and distressing sequelæ. The best method of obtaining this flap is by making it doubly pedunculated, loosening it from the neck and transplanting its center bodily over the abraded surface. Of great importance is the resection of the inferior maxilla. Without this the deeper lymphatics cannot possibly be reached.

Dr. Crile of Cleveland advocates the use of delicate clamps which, with finely adjusting screws, can be placed on arteries during the time of operation. His belief is that they do not injure the coats to any dangerous extent.

Dr. Rodman of Philadelphia said that the belief in the parasitic theory of cancer is struggling into life. Until very recently cancer was

unknown among the negroes and infants. It is difficult to explain this except by assuming a parasitic cause.

Dr. R. H. M. Dawbarn of New York endorsed Dr. Bloodgood's view of the desirability of immediate extirpation of all breast tumors as soon as seen. In exsections of the tongue, the chief cause of death is shock, which all are now agreed is chiefly due to hemorrhage. He could not agree with Dr. Fenger, who felt that the carotids should not be ligated, because it has been often shown that within a few days so free is the anastomosis that the facials begin to pulsate. Furthermore this ligation does away with the need for tracheotomy. In deaths which occur later the cause is sepsis. As in every case where a clean wound is subsequently to be bathed with pus, he rubs into the tissues a copious amount of aristol. This forms an insoluble albuminate which gives to the organism the same protection from absorption of toxin as is afforded by granulation tissues. He never packs the wound but always irrigates. His patients are left as nearly upside down as possible for weeks. Grafting the stump of the twelfth nerve into the remnants of the tongue probably gives those muscle remnants some power over the epiglottis.

(To be continued.)

#### AMERICAN PEDIATRIC SOCIETY.

*Thirteenth Annual Meeting, Held at Niagara Falls, May 27, 28 and 29, 1901.*

(Concluded from Page 876.)

#### SECOND DAY—MAY 28TH.

**Glass Sun Room on City Houses.**—By Dr. W. P. Northrup's advice, such a structure has been built on the roof of a private house in New York. It is practically an outdoor playroom, where fresh air and sunlight can be had without the dust and noise and dangers and dirt of the city streets. There is ample protection against March winds, and the playhouse can be used all winter. The family for whom the playroom was built had the satisfaction of seeing their only daughter, formerly a very delicate child, grow well and strong. Physicians should advise the construction of such playrooms where the need exists and the money can be provided.

**Duration of Summer Diarrheal Attacks Under Treatment.**—Dr. Charles Gilmore Kerley presented an analysis of 555 cases. Ages ranged from three months to four years. A proportion were said to be purely breast fed; but probably very few tenement children answer that description. In some form or under some pretext, other food is almost certain to be used from time to time among this class. Fortunately the cost of proprietary foods prevents their use to any great extent among the

very poor. The cases referred to were brought to the dispensary for treatment because of diarrhea between June and September. Of the total number 80 cases recovered in three days; 168 cases recovered in four to seven days; 79 cases recovered in seven to twelve days; 62 cases recovered in twelve to fourteen days; 11 cases recovered in third week; 58 cases recovered in fourth and fifth weeks; 10 cases recovered in sixth to eighth week; 6 cases recovered in eighth to tenth week; 15 cases recovered in third to fifth months.

**Mortality.**—Of 499 cases treated to the conclusion of their illness, 10 died—a mortality of but 2 per cent. As several thousand children perish in New York annually from summer diarrhea, the inference is that many of such deaths are preventable.

**Management of Cases.**—Regardless of the severity of the symptoms, the character or number of stools, duration of illness, or reputed character of diet, the first step is to stop the milk. In these cases there is or soon will be an infected gut; hence the intestines should be made as poor a culture tube as possible. Every case must be treated vigorously whether the symptoms are mild or severe. In 218 autopsies conducted by Dr. Kerley, he learned the futility of attempting to judge the actual condition of the intestine by the symptoms. Coarse lesions are found constantly where none are suspected during life. Having stopped the milk, do not resume its use until the stools approximate the normal. Relapse follows earlier resumption of milk diet. Cereal water is used as a substitute—barley-water usually. If a change is desired, add to barley-water a percentage of mutton-broth or beef-juice. The broths must not be added in too large amounts. Dr. Kerley does not believe in the use of brandy or whisky in these cases. White-of-egg mixtures have been discarded; many children fail to digest them. By the use of carbohydrates, the condition in the intestine is changed from one of putrefaction to one of fermentation, the latter status being less favorable for the growth of bacteria. Dextrinized gruels are useful because they permit a stronger diet to be given. The mother is instructed, where fever occurs, to give cold water sponge-baths for fifteen minutes at a time.

**Use of Drugs.**—After trials of tannigen, salol, resorcin and many other drugs, treatment by drugs narrows itself down to the use of four agents, calomel, castor oil, bismuth and opium. Calomel is preferred, where there is nausea or vomiting, in doses of  $\frac{1}{20}$  to  $\frac{1}{10}$  grain, repeated. Castor oil is used especially in acute septic cases where prompt cleansing is desired. Bismuth subnitrate is given in 10-grain doses every one or two hours regardless of the age of the child. In order to be of service it must produce black stools. If neces-

sary for the production of the sulphide, one-grain doses of precipitated sulphur are administered with the bismuth. Indications for opium are pain, tenesmus, frequent stools; four to five stools daily are desirable, however. Active laxatives are suitable where there are no stools or insufficient stools.

**Irrigation of Colon.**—A good measure is always overdone; irrigation of the bowel is an illustration. The cases in which it is of most benefit are those which have a moderate number of green stools, with or without blood. Always ask yourself, Is there something to be removed? Normal salt solution is as good as anything that can be used for the purpose; where blood is coming away, 1 per cent. tannic acid may be added. Lukewarm solutions are preferable; if fever exists, use solutions of 70° F.

**Education of Mothers.**—The mother needs minute instructions to insure cleanliness and proper care of food, bottle and nipple. Mothers must be told to stop milk and give castor oil with the first signs of intestinal derangement. Sooner or later the municipality will recognize the need of establishing laboratories under proper control, where the poor can be sent to obtain what is needed in the way of milk, gruels, broths, etc. Stations established by private benefaction are inadequate to meet the demand and lack responsible scientific control.

**Discussion.**—Dr. J. P. C. Griffith added a word of warning against the use of powerful irrigating solutions. In the uncertainty as to the condition of the intestine it is impossible to foretell when harm will result.

Dr. Koplik believes that dextrinized gruel is not indicated until vomiting has ceased. During the first few days albumin water is one of the most useful means of tiding over a difficult period. Besides the purpose of mere irrigation, hot rectal injections serve as stimulants where such are needed. A danger in milk laboratories not under control is that mothers run there and get as many bottles as they please; overfeeding results.

Dr. Buckingham could see no reason for outlawing brandy; in some cases it is useful.

Dr. Holt laid stress on the necessity for rest; babies are tired out by excessive attention. To Dr. Kerley's list of four drugs Dr. Holt would add a fifth—sulphate of magnesia as an initial cathartic.

Dr. Winters agreed as to the prompt discontinuance of milk in summer diarrheas, but had doubts as to the wisdom of substituting cereals. At the Demilt Dispensary the use of cereals alone and in combination with animal broths has been unsatisfactory. Where stimulation is needed, very hot water is the proper thing to use; the avoidance of alcohol is important.

Dr. Rotch asked why it was considered necessary to give anything at all during the



first forty-eight hours, when the alimentary tract will absorb nothing. The tissues cry out to be let alone. Barley-water can scarcely be recommended for its nutritive value, and for the craving of the infant at this time sterilized water will suffice. As to rectal irrigation, why not, before discussing its merits, drop the term "summer diarrhea" and decide whether we are contemplating a condition of fermental diarrhea or one of true ileocolitis. By a modern process, fat-free milk can be had without sugar, but representing a definite amount of proteid. This is better than a preparation of white of egg empirically administered.

**Feeding of Premature Infants.**—Dr. Charles W. Townsend described the feeding of an incubator baby. The birth was only two weeks premature; nevertheless the weight of the child was only two pounds, twelve ounces, a fact which was explained by the finding of numerous large and small areas of placental necrosis. The incubation was conducted at a temperature of 85° F., maintained by hot water. In such surroundings the child remained for six weeks. Its initial weight was doubled in twelve weeks, and at six months the baby weighed twelve pounds. By pouring off the upper part of a quart bottle of fresh, clean milk allowed to stand five hours, cream was obtained having approximately 10 per cent. of fat. By modification a mixture was obtained having a strength of 0.50 per cent. fat, 4.20 per cent. sugar, and 0.20 proteid; of this mixture one dram was at first administered every hour. For easy calculation Dr. Townsend uses as his proteid constituent white of egg, which closely resembles lactalbumin; white of egg is readily obtained and convenient to weigh. Gradually increasing the strength of the mixture, Dr. Townsend was administering, at the end of the first month, fat 3.50, sugar 5.40, proteid 1.40; of this fourteen drams at a feeding. At three months the mixture contained fat 4.00, sugar 5.60, proteid 1.60. At eight months cereal was added in the form of barley-water or oatmeal-water. Dr. Townsend does not usually give cereal before the sixth, seventh or eighth months. In some cases it is required early, our guides being pallor and loss of weight.

#### THIRD DAY—MAY 29TH.

**Election of Officers.**—Dr. W. S. Christopher of Chicago was elected President; Dr. C. W. Townsend of Boston, First Vice-President; Dr. John Dorning of New York, Second Vice-President; Dr. S. S. Adams, Secretary; Dr. J. Part West, Treasurer; Dr. W. L. Carr, Recorder and Editor. Dr. T. M. Rotch was added to the Council of the Society. Dr. David Edsall of Philadelphia was made a member.

**Congenital Hypertrophic Pyloric Stenosis.**—Dr. Saunders presented a specimen from a child who died at the age of five weeks with

the classic symptoms of congenital pyloric stenosis. The baby retained at most two meals, then the whole was vomited. Operation was advised and refused. The specimen shows hypertrophy of the entire muscular wall. Near the pylorus is a large thick ring of cartilaginous feel, which, however, on microscopic examination, reveals no cartilaginous change. The mucous membrane is thrown into thick longitudinal folds.

Dr. L. Emmett Holt advised caution in drawing conclusions from stomachs found contracted after death. Mere contraction with apparent thickening and prominent rugæ is not proof of hypertrophy. Dr. Holt has seen specimens from children from three weeks to three years of age quite as contracted as the one presented to the Society, yet there was nothing the matter with the stomachs; they simply were empty. While in the present case there seems to be pyloric thickening, the logical result of stenosis would be dilatation.

Dr. Saunders said the clinical history was important in the case under discussion; it was a classic history of stenosis. The postmortem findings confirmed the diagnosis. The fact that the usual dilatation did not occur in this case added to its interest.

**Monster by Defect.**—Dr. A. C. Cotton of Chicago presented a specimen delivered to him by Dr. J. M. Lang. The most marked defect is the shortness of the extremities; at first glance the thighs and arms seem to be wanting. A skiagram reveals but one bone in each extremity—probably humeri and femora. The hands and feet are distally clubbed and partially webbed. The cortical substance of the brain is attenuated as if by pressure, and wide separation of the parietals adds to the suggestion of a previous hydrocephalus. At the umbilicus is an omphalocele with the funis at its upper border.

**Growth and Development at Puberty.**—Dr. W. S. Christopher presented a series of tables and graphic curves based upon the measurement of over six thousand children in Chicago schools. The data represented a study of stature, weight, height sitting, endurance [ergograph], strength of grip of right and left hand, vital capacity. A careful study of normal rate and range of growth and development will furnish the means for the ready detection of pernicious variations. A puberal exaltation of growth has previously been shown as to height and weight; by these tables a similar exaltation of life processes is shown by a larger variety of measurements. Dr. Christopher called attention to the necessity of employing skilled and reliable assistance in pursuing this class of study. Observations made by teachers in the public schools are absolutely worthless and cannot be made the basis of scientific reasoning.

**Etiology and Prophylaxis of Pubescent Morbidity.**—An increased rate of growth and

increased development of physical power are characteristic of the puberal period. The sexes differ in the direction taken by this exaltation of life processes. In girls, grip, endurance and vital capacity [volume of expired air] do not increase as rapidly as in boys; on the other hand, girls at this period increase in weight and height more rapidly than boys.

Puberty is a period of great individualization, and calls for a wide range of elasticity in the physical management of the child. It is notable that while at puberty mortality is low, morbidity is high, and the great etiological factor in pubescent morbidity is unbalanced physical development. Neuroses and psychoses are often manifestations of the turmoil of this period. If in a child an excessive development of height or weight overtaxes the organs of nutritive supply, the child is reduced to a condition of vital bankruptcy. Such cases Dr. Christopher treats with rest, improved nutrition and the much-despised shoulder-braces. In treating cases of faulty development we must consider such factors as food-supply, condition of nutritive organs, condition of blood, condition of eliminative organs, type of general metabolism.

Dr. W. D. Booker said that Dr. Christopher's studies would be of incalculable benefit to the profession and the community. The Society will look for further enlightenment from the same source.

Dr. L. Emmett Holt said that for some years it has been his practice to record from time to time measurements of head, chest, height and weight in growing children. By this means attention is promptly called to abnormalities. A physician who notices that a child's chest measurement is small realizes that something is radically wrong in that child's life.

**Arsenical Poisoning.**—Dr. John Lovett Morse of Boston reported a case of arsenical poisoning in an infant. There was marked irritation of the kidney, with albumin, blood and casts in the urine; loss of weight and pallor of skin indicated a disturbance of nutrition; the spleen was enlarged. The source of the arsenic was found to be the blue lining of the baby's bassinet. When the child was removed to another place its condition began to improve; weight and color became normal, the spleen ceased to be palpable, and the urine lost its abnormal constituents. During the illness a cardiac murmur and venous hum were noticed; these were gradually lost. During convalescence the patient developed an acute coryza, and renal complications developed afresh. The child has recovered from its cold, but albumin and casts continue without, however, giving rise to constitutional symptoms.

**Temperature in Terminal Tuberculosis.**—Dr. S. S. Adams of Washington said he had been struck with the very wide fluctuations of temperature in the later stages of pulmonary tuberculosis in a series of cases in children from three to eleven years. There were no chills, nor sweats in these cases, no cerebral signs of hyper-

pyrexia—in short, no evidences of septic complications except leucocytosis. The children seemed comfortable and took food regularly even when the temperatures were highest. Morning temperatures were in many instances too low to be recorded by the clinical thermometer. Typical cases ranged from 96° F. in the morning to 105.6° in the evening. Cavities existed in some of the cases—not in all—but the clinical feature to which special attention was called was uniformly present. While fluctuating temperature is frequently spoken of in the description of similar cases, the immense range of the variations is not usually mentioned.

Dr. J. P. C. Griffith described cases of bronchopneumonia in which showed the same type of temperature; his cases eventuated in tuberculosis, but did not go on to the softening stage. In other instances such temperatures had defied absolute diagnosis; physical signs could not be demonstrated, and the patients proceeded to recovery.

Dr. L. Emmett Holt regarded Dr. Adams' cases as probably complicated with streptococcus infection. Tuberculous processes do not alone cause such temperatures; septic pulmonary processes do, even without a general streptococcal blood-infection.

**Measles Complicated by Appendicitis.**—Dr. Harold Williams reported a case of measles in which pain and tenderness of increasing severity in the region of the appendix began twenty-four hours after the appearance of the eruption. Dulness and induration were absent; temperature, 104° F. Dr. Arthur Cabot was called in consultation, together with Dr. McCullum, and immediate operation was decided upon. A gangrenous appendix was removed. The temperature fell to normal the following day and did not subsequently rise. The case shows that in a weakly boy of twelve years measles is not a contraindication to operation.

**Treatment of Diphtheria of Conjunctiva.**—Dr. L. Emmett Holt placed on record a case of diphtheritic conjunctivitis which yielded readily to antitoxin.

Dr. Henry D. Chapin said that after treating five cases of diphtheria of the eye he believed that, while the administration of antitoxin should be resorted to as a matter of routine, local treatment has as much to do with saving the eye as any other measure. In his cases ice pledgets and constant irrigation were used.

Dr. T. M. Rotch did not consider it wise to lay too much stress on local treatment. Such treatment should be carefully followed out, but to neglect the prompt use of antitoxin in every case would be to court unnecessary danger.

Dr. Charles G. Kerley spoke of two cases of diphtheritic rhinitis which occurred in the children of a New York laryngologist. The latter treated them unsuccessfully for four weeks as ordinary catarrh. Constitutional symptoms were absolutely wanting. Cultures showed the presence of the diphtheria bacillus in both nose and



throat. One thousand units of antitoxin were given. The children were cured.

**Hemorrhage in the Newborn.**—Dr. L. Emmett Holt was once called to see a case where, twenty-four hours after birth, a robust nine-pound baby began to vomit blood. This continued throughout the day at fifteen-minute intervals. The mother had lost a baby two years before on its fourth day from gastro-intestinal hemorrhage and was much alarmed. Dr. Holt began the administration of one-grain doses of suprarenal extract at one-hour intervals. When twelve doses had been given the hemorrhage ceased. A practical obstacle to the long-continued administration of suprarenal extract is puckering of the esophagus; the first few doses, however, are easy to get down. Similar treatment was tried in another case reported to Dr. Holt, but here the baby died of intracranial hemorrhage.

Dr. J. L. Morse said he had tried suprarenal extract in a case similar to Dr. Holt's, but had applied it externally in the form of a powder. The result was negative. Ultimately Monsel's solution was used internally and the hemorrhage ceased.

**Possible Infectious Nature of Such Hemorrhages.**—Cases of hemorrhage in the newborn, said Dr. Rotch, are frequently not hemophilia, but possibly are infectious. A rise of temperature is not uncommon, though none was present in Dr. Holt's case. Difficulty in the interpretation of the value of therapeutic measures arises from our ignorance of the natural course of the disease. These cases are not necessarily fatal even when complicated with ecchymosis and intraocular hemorrhage. We cannot yet answer the question whether subsidence of hemorrhage means that our drugs are efficient or that the disease has run its course. Nevertheless it would be wise to use suprarenal extract in additional cases.

Dr. J. C. Wilson, in discussing the value of suprarenal extract, described the case of a young man admitted to the hospital with gonorrhea. Obstruction led to the use of the catheter, and the bladder was found to be filled with blood, which was drawn off. Vesical distention with blood recurred, and the patient developed hemoptysis, epistaxis, purpura, these continuing for three days. Suprarenal extract was then given in five-grain doses; bleeding ceased after six doses and recovery followed.

Dr. Holt said that the term hemophilia, as applied to hemorrhages in the newborn, is a misnomer. In hemophilia the hereditary element is the main factor; this condition does not become manifest during the first few weeks of life. Hemorrhage in the newborn is a self-limited disease, but the bleeding does not always cease when it should. In the case reported suprarenal seemed to have had prompt effect.

**Sacculated Empyema with Prolonged Temperature.**—A baby was admitted to the service of Dr. L. Emmett Holt with gastro-intestinal

symptoms. After ten days the temperature suddenly rose to 106° F., and during eleven weeks following fluctuated between normal and 105°. The pulse-temperature ratio remained about 3:1. Pulmonary consolidation was suspected, but physical signs were never definite; slight dullness and râles were detected on both sides alike. Intestinal symptoms were never very marked; but throughout its illness the child had from four to five stools each day. Widal test and search for plasmodia negative. Blood-cultures negative. By passing a catheter sputa were obtained for examination for tubercle bacillus. This method Dr. Holt considers superior to scraping the back of the throat. In the present case no tubercle bacilli were found. Successive blood-counts showed leucocytosis 22,000, 14,000, 11,000. Wasting was progressive. The autopsy revealed muco-purulent bronchopneumonia, adherent pleura on both sides, and a sacculated empyema holding two ounces of pus on the diaphragmatic surface of the left lung.

**Prolonged High Temperature Without Wasting.**—Dr. Henry D. Chapin reported a case of persistent high temperature which was studied in the hospital for two months without positive diagnosis. Every fifth day the temperature rose to 104° or 105° F. Quinine, Warburg's tincture, and Fowler's solution did not influence the fever. Between the exacerbations of fever the child felt perfectly well. Examination of blood and sputa for malaria, typhoid and tuberculosis, negative. After two months the child went home and eventually recovered. Interest in the case resided in the fact that there was no wasting; where fever is due to tuberculosis wasting is an almost invariable accompaniment.

## BOOK REVIEWS.

**FIRST AID TO THE INJURED AND AMBULANCE DRILL.** By H. DRINKWATER, M.D. The Macmillan Company, London and New York.

THIS little primer is compiled from a series of lectures given by the author in "first aid" courses. It is redolent with most useful hints and directions for treatment of various injuries which may happen. The treatment of the subject-matter is very simple and clear. There is a very valuable chapter devoted to the treatment of poisoning by various drugs. The second part of the book is devoted to ambulance drill. Here, very completely, but simply, the author shows the proper methods for removing patients from one place to another, by means of hand litters and ordinary stretchers. The text is very richly illustrated so that one can readily comprehend every portion of it.

This booklet is one of many of its kind, but we are sure that it will prove a most valuable assistance to those interested in "first aid" to the injured.

**INFANT FEEDING IN ITS RELATION TO HEALTH AND DISEASE.** By LOUIS FISCHER, M.D., Attending Physician to the Children's Service of the German Poliklinik and of the West Side German Dispensary; Professor of Diseases of Children in the New York School of Clinical Medicine, etc. The F. A. Davis Company, Philadelphia.

A SOMEWHAT detailed knowledge of the modification of milk and other foods for infants has become a necessity for the general practitioner. He should therefore welcome this work which gathers together the accepted ideas on the subject, and encloses them in small compass. After a concise description of the infantile alimentary tract, breast-feeding, mixed feeding, wet-nursing and weaning, the use of modified milk in health is discussed at some length, including its pasteurization and sterilization. A chapter on nipples and nursing-bottles, and a dietary with recipes for various junkets, gruels, etc., are not untimely. The consideration of feeding in disease covers the modification of foods in constipation, diarrhea, and the other common diseases to which infants are susceptible. Rectal feeding, nasal feeding, and the feeding of incubator-babies and diphtheria-intubation cases fill chapters of practical value. The works of other writers have been freely drawn upon, the author criticizing freely and adding the conclusions from his own experience.

**A MEDICO-LEGAL MANUAL.** By WILLIAM W. KEYSOR, Lecturer on Medical Jurisprudence in the Omaha Medical College and Judge of the District Court, Omaha, Nebraska. Burkley Printing Company, Omaha, 1901.

THE author says very well in the preface that works on medical jurisprudence are written seemingly for lawyers rather than doctors. Pages are devoted to the signs of pregnancy, chapters to wounds and a volume to poison. Such a work is of little value to the physician who can always find the information it conveys more amply and accurately stated in special treatises in his library. It is to fill the long felt want of a brief manual which shall convey to the doctor especially the legal points necessary for his calling that the present little book is issued.

The work seems to accomplish its purpose very well. The chapter on "Evidence" is particularly practical and would enable many a physician who is about to be a witness to save himself from being made the sport of a brow-beating cross questioner. The chapters on "The Mind Diseased," on "What Constitutes a Mind in Law" and that on "The Identification of Person" are very interesting, condensed statements of large important subjects for which much seeking would have to be done in many books. The book-making and binding is scarcely worthy of the contents of the book.

**A TEXT-BOOK ON PRACTICAL OBSTETRICS.** By EGBERT H. GRANDIN, M.D., with the collaboration of GEORGE W. JARMIN, M.D. Third Edition Revised and Enlarged. F. A. Davis Co., Philadelphia and Chicago.

IN this third edition, the authors have added a chapter dealing with the anatomy of the female organs of generation and with embryology. The aim has been to be as concise as possible with the anatomical description; likewise with embryology which commences with a description of the Graafian follicle and ovum and traces the changes taking place in the ovum following fecundation, down to the time of its casting off at full term.

Labor, both normal and abnormal, is fully described and the mechanical principles involved are well brought out. The method of procedure in abnormal cases is made perfectly clear and the student is easily able to grasp the situation intelligently from the rules laid down. Considerable space has been devoted to the care of the newborn infant which will be appreciated by most practitioners. The normal and pathological puerperium is well described and the methods of conducting it are such as are approved by the foremost obstetricians of the present day.

Under obstetric surgery artificial abortion and induction of premature labor are described, also forceps, version, symphysiotomy, Cæsarian section, embryotomy, surgery of the puerperium and ectopic gestation.

The book is well written and should appeal strongly to the student body and general practitioners. The illustrations are good, yet hardly up to the standard. There are 52 full-page plates and 105 illustrations in the text. The book contains about 500 pages.

## BOOKS RECEIVED.

*The MEDICAL NEWS acknowledges the receipt of the following new publications. Reviews of those possessing special interest for the readers of the MEDICAL NEWS will shortly appear.*

**ATLAS AND EPILOGUE OF LABOR AND OPERATIVE OBSTETRICS.** By Dr. O. Schaeffer. Edited by Dr. J. C. Edgar. 12mo. Illustrated. W. B. Saunders & Company, Philadelphia and London.

**ANATOMICAL ATLAS OF OBSTETRICS.** By Dr. O. Schaeffer. Edited by Dr. J. C. Edgar. 12mo. Illustrated. W. B. Saunders & Company, Philadelphia and London.

**NEW REMEDIES AND THERAPEUTIC MEASURES.** By Dr. J. M. Wainwright. 12mo, 225 pages. G. P. Engelhard & Company, Chicago.

**THE ACUTE CONTAGIOUS DISEASES OF CHILDHOOD.** By Dr. M. P. Hatfield. 12mo, 135 pages. Illustrated. G. P. Engelhard & Company, Chicago.

**THE OPTICIAN'S MANUAL.** By Dr. C. H. Brown. 8vo, 417 pages. Illustrated. Fourth Edition. The Keystone, Philadelphia.

**INTERNATIONAL CLINICS. A Quarterly of Clinical Lectures.** Edited by Henry W. Cattell. Vol. I. Eleventh Series. 1901. J. B. Lippincott Company, Philadelphia.

**SELF-EXAMINATION FOR MEDICAL STUDENTS.** 350 Questions on Medical Subjects. Third Edition, Enlarged. P. Blakiston's Son & Co., Philadelphia.